



Curriculum

Module 7

Endangered Species

Teaching and Learning Sequence

Middle Years of Schooling (Years 6 – 9)

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Queensland Government
Education Queensland



Independent Schools
Queensland



Earth Charter
Australia



Brisbane Catholic
Education



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ENDANGERED SPECIES – Teaching & Learning Sequence

This section is designed to be used as an introduction to Brink Adventures. It can be used effectively in two different ways. Firstly, it can be used at the beginning of this unit to motivate adolescents who may not be interested in studying about endangered species. Young men embarking on an extreme adventure is likely to engage even the usually disinterested student. Secondly this section could be introduced during the main phase of the module as students uncover the significance of relationships between people and their environments. Then the expedition can be presented as an example of people working for positive change and students can discover, along with the team, the issues and ways to address them. If students have been following the team on earlier legs of their expedition teachers may want to skip all or some of this section.

There are three components to this section:

1. An introduction to the Brink Adventures website <http://www.brinkadventures.org/default.asp>
2. A look at the logistics of planning the expedition
3. Using mapping skills to follow the progress of the adventurers

All components can be addressed with students from Years 6-9, with the complexity being adjusted accordingly. If teachers want to assess work in this section it is suggested that parts one and two draw on aspects of English, especially text types – websites, email, journals and interviews. In section three, mapping activities can be designed and assessed using aspects of Studies of Society and Environment.

Component	Suggested teaching and learning activities	Resource sheets
Introduction to the Brink Adventures website	<ul style="list-style-type: none">• Taking a tour of the website• Sending the team an email• Reading their journals	<ul style="list-style-type: none">• A website quiz• How to send an email• Journal reflections
Planning an expedition	<ul style="list-style-type: none">• Planning for adventure• Reading an interview with the team	
Mapping the journey	<ul style="list-style-type: none">• Following the expedition in the classroom	<ul style="list-style-type: none">• A map of the route

LINKS

Brink Adventures www.brinkadventures.org

TEACHING AND LEARNING ACTIVITIES

A TOUR OF THE WEBSITE

Students take a tour of the Brink Adventures website.

- Teachers should prepare for this activity by taking a tour of the website www.brinkadventures.org. Put the website address in the favourites folder of the classroom and/or library resource centre computers. If uninterrupted Internet access is not possible, download the site.
- Provide students, perhaps working in pairs, with a copy of *Resource sheet: A website guide* and give them the time to complete it. This could be given as a homework task if students have Internet access at home.
- When students have completed the task, facilitate a class discussion about the things that students have discovered, items of interest regarding the site design, site content and purpose of the expedition. This site exploration may have raised some questions that can be recorded either individually or on a class list to follow up later.

SENDING THE TEAM AN EMAIL

Students send an email to the Brink team.

- Many students are experienced at sending email. In this activity students send an email using a form on a website rather than an email program such as Outlook Express.
- Provide students, perhaps working in pairs, with a copy of the *Resource sheet: How to send an email*. Direct students to the Brink Adventures website <http://www.brinkadventures.org> and invite them to send the team an email.

READING THEIR JOURNALS

Students access journals from Brink Adventures.

- The *Resource sheet: Journal reflections* is divided into two parts. Part A uses a journal entry from the schoolroom. Schoolroom journal entries are shorter and use simpler language than regular journal entries making them suitable for primary school students or secondary students with lower literacy levels. Part B uses regular journal entries. Teachers should choose the section/s appropriate to the needs of their students. Provide them with a copy of the resource sheet and invite them to complete the task.

PLANNING FOR ADVENTURE

Students consider how to prepare for an epic voyage around the world.

- Facilitate a class discussion about what students think they would need to do to prepare for an epic voyage around the world.
- Invite students, working in pairs, to list the things they'd need to consider, including a list of things they'd need to take. With younger students, draw on their experience of going camping or out for the day/overnight where there are no shops to buy things.
- Another source of information are the Factfiles – visit <http://www.brinkadventures.org/FactFile>

AN INTERVIEW WITH THE TEAM

Students develop interview questions for the Brink adventurers.

- Facilitate a think, pair, share process by asking students to think about a question/s they would like to ask the expedition team. Then ask students to discuss their question/s with a partner and write down two of those questions. Invite pairs to share one of their questions with the whole group and record these questions on a group list that everyone can see.
- When each pair has submitted a question, ask pairs if they would like to add another question that isn't already listed or organise/revise the list in some way. Depending on the number of questions in the list, students may need to be selective to arrive at a final group list that can be emailed to the team.

FOLLOWING THE VOYAGE IN THE CLASSROOM

Students plot the Brink Adventures expedition route on a map.

- Information on the expedition route can be found at <http://www.brinkadventures.org/TheExpedition/TheExpedition.asp>
- Using the National Geographic map received by schools after signing up to Brink Adventures SchoolRoom, plot the journey using references from the team's journals. As each journal entry is read, teachers might ask students to locate places on the map and track the journey using coloured pins and wool or dot stickers. (for information on signing up to the Brink Adventures SchoolRoom, visit <http://www.brinkadventures.org/SchoolRoom>)
- Another source of information are the Factfiles – search for an entry entitled “Planning the ocean voyage” <http://www.brinkadventures.org/FactFile>
- For individual maps for student plotting use *Resource sheet: A map of the route*.
- Find out about the places along the route. There are many travel websites including:
 - <http://www.timeanddate.com> shows the time, date, sunrise and sunset, latitude and longitude and telephone dialling codes of places all around the world. It even includes a small world map to indicate location.

SECTION ONE: ENDANGERED SPECIES

As the team from Brink Adventures journey through South East Asia, this module will focus on the threats to species throughout the region and the possibilities for protecting such species. The logo for Brink Adventures is none other than Australia's most famous of extinct species - the Thylacine, or Tasmanian tiger. Use of an extinct species as a logo serves as a reminder that time can be of the essence and action must be taken before there can be no recovery.

Focus Questions include:

- What causes some species to become extinct?
- Why should the endangerment or extinction of species concern us?

ESSENTIAL LEARNINGS

SOSE

YEAR 7 JUNCTURE – PLACE AND SPACE

Environments are defined by physical characteristics and processes, and are connected to human activities and decisions about resource management.

- Natural hazards are a result of natural processes, and human activity can affect the impacts of these occurrences. E.g. cyclones are a common occurrence in Queensland and increased coastal development has intensified their impact.
- Sustainability requires a balance between using, conserving and protecting environments, and involves decisions about how resources are used and managed. E.g. “rethink, reduce, reuse and recycle”; renewable versus non-renewable energy sources.
- Distribution maps, climate zone maps and weather maps have specific features to convey information, including latitude, longitude, eight compass points, scale and distance, a legend and shading and/or symbols.

YEAR 9 JUNCTURE – PLACE AND SPACE

Environments are defined by spatial patterns, human and physical interactions, and sustainable practices can balance human activity and environmental processes.

- Interrelationships between human activity and environments result in particular patterns of land and resource use, and can cause environmental problems. E.g. overgrazing and erosion; overuse of fossil fuels and carbon dioxide emissions.
- Governments and communities need to balance economic, social, political and environmental factors through sustainable development, consumption and production. E.g. resource use and environmental impacts; logging and the survival of small communities dependent on that industry.
- Maps, including topographic, political and thematic maps, are developed with particular features, including scale, contour lines and human-created boundaries, and use the specific skills of observing, visualising, estimating, sketching and measuring.

SCIENCE

YEAR 7 JUNCTURE – SCIENCE AS A HUMAN ENDEAVOUR

Science impacts on people, their environment and their communities.

- Ethical considerations are involved in decisions made about applications of science. E.g. preservation of wilderness environments to help protect endangered species.

YEAR 7 JUNCTURE - LIFE AND LIVING

Living things have structures that enable them to survive and reproduce.

- Survival of organisms is dependent on their adaptation to their environment e.g. animals use camouflage to protect themselves; plants in very dry areas may store water in modified structures.
- Different feeding relationships exist within an ecosystem. E.g. producer, consumer, herbivore, carnivore relationships form a food web.

YEAR 9 JUNCTURE – SCIENCE AS A HUMAN ENDEAVOUR

Responsible and informed decisions about real-world issues are influenced by the application of scientific knowledge.

- Immediate and long-term consequences of human activity can be predicted by considering past and present events. E.g. consequences of unsustainable use of fossil fuels can be seen in environmental impacts.
- Responsible, ethical and informed decisions about social priorities often require the application of scientific understanding. E.g. use of alternative forms of energy; use of recycled water; development of influenza and cervical cancer vaccines.

YEAR 9 JUNCTURE – LIFE AND LIVING

Organisms interact with their environment in order to survive and reproduce.

- In ecosystems, organisms interact with each other and their surroundings. E.g. the scavenger role of the crab in the mangroves means that it has a plentiful supply of food and it contributes by cleaning its surroundings.
- Changes in ecosystems have causes and consequences that may be predicted. E.g. bushfires destroy natural bushland, which temporarily changes the ecosystem; birds return to dried-up waterholes after rain.

OVERVIEW OF TEACHING AND LEARNING STRATEGIES

Stage of Inquiry	Activity/Strategy	Juncture	Resources Sheets
Tune-In	<ul style="list-style-type: none"> • Making choices and understanding the consequences • Is extinction a necessary outcome of being endangered? 	<p>Years 6-7</p> <p>Years 6-7</p>	<ul style="list-style-type: none"> • Rosie's alternatives • Endangered species reflection log • Endangered species timeline • Endangered species reflection log on thylacine
Explore	<ul style="list-style-type: none"> • Maximising our responses • Do endangered species exist in South East Asia? 	<p>Years 6-9</p> <p>Years 6-9</p>	<ul style="list-style-type: none"> • Endangered species essential elements • South East Asia map • Are there endangered species in South East Asia?
Look and sort	<ul style="list-style-type: none"> • Cause and effect • What's my choice? 	<p>Years 6-9</p> <p>Years 6-9</p>	<ul style="list-style-type: none"> • Major types of threats faced by any species • What happens when ...? • Reflection log
Test and Act	<ul style="list-style-type: none"> • In my area 	Years 6-9	
Reflect	<ul style="list-style-type: none"> • What's next? 	Years 7-9	<ul style="list-style-type: none"> • Final reflection log

TEACHING AND LEARNING ACTIVITIES

TUNE-IN

MAKING CHOICES AND UNDERSTANDING THE CONSEQUENCES

- Pre-read 'I saw nothing: the extinction of the thylacine' by Gary Crew.
- After reading story, students discuss (in small groups) the story and generate any alternate options for Rosie's action. Students should also identify the potential consequences of the changed actions for the thylacine.
- Group discussions can be mapped on a story web and shared across the class. Students can use a blank A3 sheet of paper to map discussion or a structured concept map can be provided. (prepare a resource sheet)
- Students begin a reflection log in which they identify what they understand about the nature of actions and their consequences. (prepare resource sheet)

IS EXTINCTION A NECESSARY OUTCOME OF BEING ENDANGERED?

- Students use dictionary and/or thesaurus to understand 'endangered' and 'extinct'. Students discuss whether they believe extinction is an automatic outcome of being endangered or if action can be taken to prevent extinction.
- Students identify reasons for thylacine endangerment and ultimate extinction. Information can be located in a variety of locations including: <http://www.naturalworlds.org/thylacine/>
- Students read "Natural History of *Thylacinus cynocephalus*" <http://www.naturalworlds.org/thylacine/naturalhistory/naturalhistory.htm> and construct a timeline of events leading up to the extinction of the thylacine. Students include factual information from the website and information from the text "I saw nothing" by Gary Crew – visit <http://www.curriculumpress.edu.au/rel/sustainability/i-saw-nothing.php> .
- Students discuss Rosie's statement "...I'm not saying that I could have saved the species..." Would different actions on Rosie's part have saved or not saved the thylacine? Students discuss whether they believed the thylacine was already 'endangered' by the time Rosie saw it on the trapper's horse. Students should be able to justify their statements, using factual information about the timeline of events that led to the extinction of the thylacine.
- Students try to identify what actions would have been necessary to have saved the thylacine. Refer back to their original concept map to identify whether the information would impact on some of the alternate actions for Rosie.
- Students discuss whether they believe that the thylacine would become extinct despite any action Rosie taken by Rosie. Justify with reasons.
- In their reflection logs, students record their understandings of the impacts on the thylacine which led to its extinction.
- Students consider whether Rosie thought the thylacine was worth saving. What reasons do students use as evidence to justify their position? Students record their response as to whether they think the thylacine was worth saving.

EXPLORE

MAXIMISING OUR RESPONSES

- Students need to be familiar with Brink Adventures. If students have not engaged with the optional introductory section, teachers would need to ensure some familiarity with the Brink Adventures and its intended outcomes.
- Students look at Brink Adventures website at <http://www.brinkadventures.org/> to locate the organisation's logo. After identifying the logo as a stylised thylacine paw print that incorporates a map of Australia, students discuss what might be a rationale for this mascot. Does it meet this purpose?
- Students identify actions they could take today (in a modern context) if they saw a thylacine on its way to a zoo. Students brainstorm the range of actions they could take – options could include a “Adventures ”-type expedition, an advertising campaign to change public opinion, political campaign to influence politicians, etc.
- Students discuss possibilities for action in their classroom context and in their life-roles as students. Identify that while an expedition such as Brink Adventures is probably not a possibility, they can and should use Brink Adventures as a resource. Identify that their actions will be to undertake a task that is either:
 - a campaign of their own design in response to the endangered status of a species **or**
 - development of resources suitable for inclusion on the Brink Adventures website to highlight the endangered status of a species.
- Facilitate student discussion on how campaigns can influence others. Discuss the outcome of a campaign in terms of which has greater impact – a campaign to influence opinion or a campaign to influence somebody's actions. Refer to advertising campaigns – what are they trying to achieve?
- Students collect examples of similar campaigns they consider to be successful. Examples can be drawn from print media, broadcast media (television and radio). Examples could include an RSPCA campaign against animal cruelty or a campaign against the use of animals in cosmetic product testing. Students identify common features of successful campaigns.
- Students record the essential elements they will need to consider when designing their campaign.
- Facilitate student discussion about the types of material currently available on the Brink Adventures website and determine possible additions to the website that could enhance the intended purpose of raising awareness of the issue of endangered species.

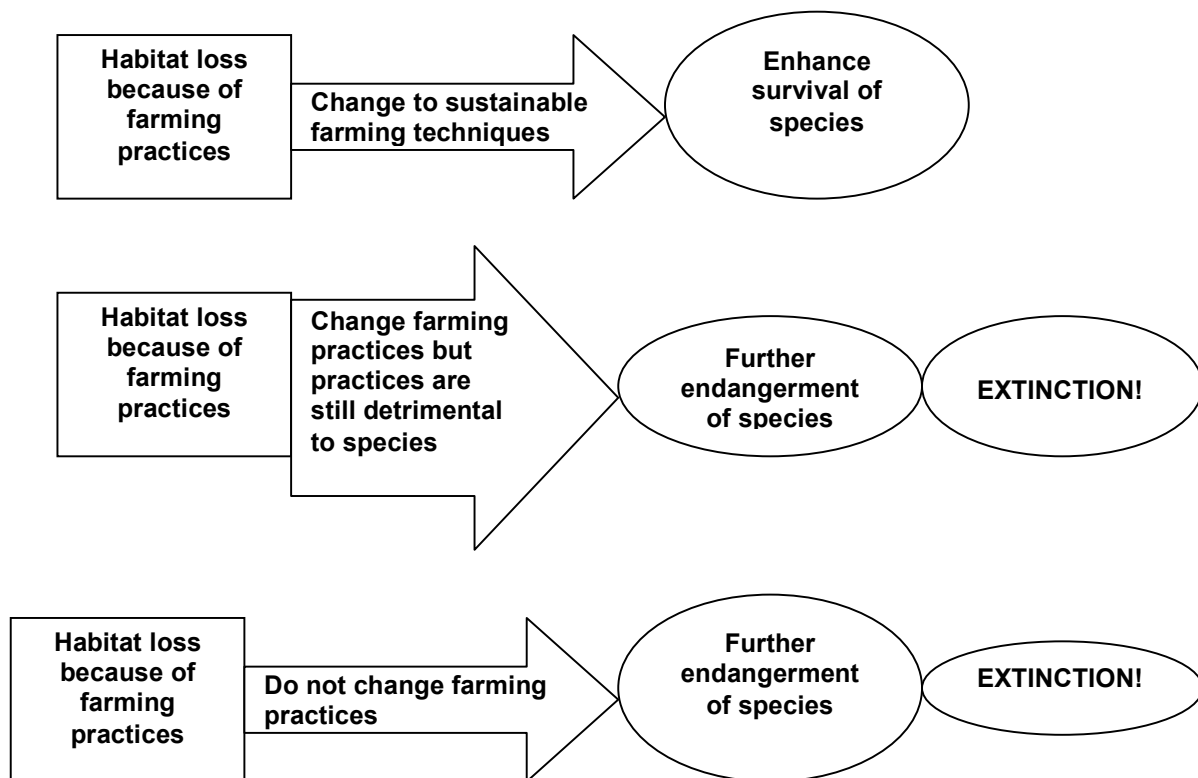
DO ENDANGERED SPECIES EXIST IN SOUTH EAST ASIA?

- Students identify South East Asia using http://www.reliefweb.int/mapc/asi_se/reg/seasia.html . Students complete map, identifying countries of SE Asia.
- Students use a variety of internet sources to identify species of fauna that are endangered in SE Asia. Use *Resource sheet: Do endangered species exist in South East Asia?* to facilitate their exploration. Students use a number of the websites to gain an overview of the types of endangered species in SE Asia. Facilitate whole class discussion about information in websites – whether endangered species are flora (plants) or fauna (animals).

LOOK AND SORT

CAUSE AND EFFECT

- Students discuss *Resource Sheet: Major types of threats* to identify factors that can impact on whether a species becomes endangered. Return to 'I saw nothing' and information in <http://www.naturalworlds.org/thylacine/> and have students identify the major threat/s to the thylacine.
- In small groups, students focus on one particular type of threat and discuss actions that can result from the threat. Students name the action and identify its consequences in terms of whether the action further endangers the species or improves the survival prospects of the species.
- Examples of some potential responses to threats due to habitat loss are explored below. These are not the only responses that could be made to this threat.



- Groups share their discussions. Use a variety of rectangles, arrows and ellipses to display student discussions. Students record the discussion by completing a retrieval chart. Ask students to hypothesise whether any of these actions would have helped Rosie to save the thylacine.
- Students illustrate their understanding of the connections and relationships between 'threats', 'endangered' and 'extinct'.
- Focus students on one endangered species – the Javan Rhino. Students research information about the Rhino from a range of websites including: <http://www.rhinosourcecenter.com/species/javan-rhino/>

WHAT'S MY CHOICE

- In small groups, students design a campaign/develop material for inclusion on the Brink Adventures website to highlight the plight of the Javan Rhino. Content must include information about specific threats to the Javan Rhino (such as intrinsic threats like inbreeding) and identify some potential responses (support for research by 'adopting' a rhino). Students must also predict when the Javan Rhino might become extinct if action is not taken to alleviate threats to its survival. A range of presentation modes could be used including posters, displays, PowerPoint, debate, panel discussion, brochures, postcards or advertisements.
- Students must identify a target audience (eg their school peers, politicians, etc) and purpose for their campaign (to influence decision-making, to take action) and ensure that sufficient information is included to allow the audience to reach an informed understanding of the issue.
- Students incorporate a dialogue with the Brink Adventurers into various aspects of their task: requesting photographs from the adventure to use in their campaigns; incorporating the Brink Adventures logo of the thylacine print or visiting Ujung Kulon National Park http://whc.unesco.org/pg.cfm?cid=31&id_site=608 to find out what is happening to enhance the survival of the Javan rhino.

TEST AND ACT

IN MY AREA

- Students will share and enact their campaigns within their school. As part of their campaigns, students are to incorporate strategies (surveys, votes) seeking perspectives regarding the effectiveness of the individual campaigns. Students should consider collecting feedback about the most effective/least effective aspects of the campaign (particularly with reference to stated purpose), as well as the most appealing/least appealing aspects of their campaigns.
- Students will share the information developed for inclusion as a hyperlink to the Brink Adventures website: <http://www.brinkadventures.org/default.asp>
- As part of the task design, students need to incorporate strategies to gather feedback on useability and effectiveness. Students can then refine and adjust various components to improve the overall effectiveness of their campaigns.
- Students submit material and information for inclusion on the Brink website to highlight the issue of endangered species generally, and the Javan Rhino in particular.

REFLECT

WHAT'S NEXT

- Students refer back to their reflection log and consider the broader question about why the endangerment or extinction of any species should be of concern to society. Students should draw on experiences of activities and engagement in this module to assist in their reflection. Students can evaluate aspects of their task to identify what they would change in the future and what emerged as successful elements of their overall campaigns in order to continue to raise awareness of the endangerment of species to wider audiences.