



Curriculum

Module 8

Disappearing Forests

Teaching and Learning Sequence

Middle Years of Schooling (Years 7 – 9)

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Queensland Government
Education Queensland



Independent Schools
Queensland



Earth Charter
Australia



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Education



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DISAPPEARING FORESTS – 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.

EXPLORING PREVIOUS RAINFOREST EXPERIENCES

Students access the adventurers' journals and the fact files to refresh their knowledge of the rainforest.

- The *Resource sheet: What do we know about the Rainforest from the expedition?* is divided into two parts. In Part A students search the journal entries for previous entries relating to the Brink Adventurers' experiences in the rainforest. In most cases the rainforest has been referred to as 'jungle' and teachers should explain why this word is often used. In Part B students search the Fact Files section of the website. Provide students with a copy of the resource sheet and invite them to complete the task.

Disappearing Forests: Investigations 1 and 2

Focus questions

Throughout the two parts to this module students will be confronted with a range of sub questions to investigate. However the overall focus questions for the module are:

1. What challenges are facing the world's forests?
2. Why do we need to work for the future survival of the world's forests?
3. How is the issue of ecological sustainability connected to economic sustainability?
4. What are some socially just and peaceful ways of resolving or managing these issues?

Essential Learnings

Throughout this module, students are given multiple opportunities to demonstrate their knowledge and understanding in relation to the history of deforestation and future implications for South East Asia and Australia. Teachers may choose a range of possible assessment opportunities from both the Science and Studies of Society and Environment: Essential Learnings for Years 7 and 9.

Investigation 1: South East Asia

What are the different values (uses) of rainforests?

SOSE – Year 9 Juncture - Place and Space

- Interrelationships between human activity and environments result in particular patterns of land and resource use, and can cause environmental problems

How have patterns of deforestation changed over time? (Web investigation and Statistical analysis)

SOSE – Year 7 Juncture - Place and Space

- 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

SOSE - Year 9 Juncture – Time, Continuity and Change

- Evidence of events in Australian, Asian, Pacific and global settings can be interpreted from different perspectives and values positions

Who buys tropical rainforest timber?

- **How are the demands for forest products balanced with other uses and values? (sustainable forest management model, Sabah)**

SOSE – Year 7 Juncture - Place and Space

- Australian environments are defined by patterns of natural processes, by human activities and by the relationships between them, including climate and natural resource distribution, resource use, and settlement patterns

How do indigenous groups in SE Asia value forests?

SOSE – Year 7 Juncture - Culture and Identity

- Contact between Indigenous and non-Indigenous cultures in Australia and in other places have had significant effects on language, culture, land ownership, health and education of Indigenous people

SOSE – Year 9 Juncture - Time, Continuity and Change

- Evidence of events in Australian, Asian, Pacific and global settings can be interpreted from different perspectives and values positions

What are the social, environmental, cultural and economic impacts of deforestation in SE Asia?

SOSE – Year 9 Juncture - Place and Space

- Australia, the Asia-Pacific region and other global settings are defined by a range of natural characteristics and processes, including landforms, vegetation and climatic zones, and human activities, including cultural, economic and political activity
- Interrelationships between human activity and environments result in particular patterns of land and resource use, and can cause environmental problems
- Governments and communities need to balance economic, social, political and environmental factors through sustainable development, consumption and production

Can forests be sustainably managed? (Model of SFM in Sabah)

Science - Year 7 Juncture – Science as a Human Endeavour

- Scientific knowledge can help to make natural, social and built environments sustainable, at a scale ranging from local to global

SOSE – Year 9 Juncture - Place and Space

- Governments and communities need to balance economic, social, political and environmental factors through sustainable development, consumption and production
- Interrelationships between human activity and environments result in particular patterns of land and resource use, and can cause environmental problems

What can we do to reduce deforestation in SE Asia?

- **How can we reduce the consumption of rainforest products?**
- **Which community and global campaigns are being used to raise awareness of the impact of deforestation?**

SOSE – Year 9 Juncture - Time, Continuity and Change

- Evidence of events in Australian, Asian, Pacific and global settings can be interpreted from different perspectives and values positions

SOSE – Year 7 Juncture – Place and Space

- Sustainability requires a balance between using, conserving and protecting environments, and involves decisions about how resources are used and managed

SOSE – Year 9 Juncture - Place and Space

- Interrelationships between human activity and environments result in particular patterns of land and resource use, and can cause environmental problems
- Governments and communities need to balance economic, social, political and environmental factors through sustainable development, consumption and production

SOSE – Year 9 Juncture – Political and Economic Systems

- Australian citizenship involves recognising global perspectives and balancing majority rule against respecting minority interests

Science - Year 7 Juncture – Science as a Human Endeavour

- Scientific knowledge can help to make natural, social and built environments sustainable, at a scale ranging from local to global

Science - Year 9 Juncture – Science as a Human Endeavour

- Responsible, ethical and informed decisions about social priorities often require the application of scientific understanding

Investigation 2: Styx Valley

What is the historical background to the Tasmanian forest industry and campaign to save the Styx Valley?

- **What are the different values stances and perspectives involved in this issue?**

SOSE – Year 7 Juncture - Time, Continuity and Change

- National traditions, celebrations and commemorations have evolved to reflect public sentiment and the perspectives, values and interpretations of different groups

SOSE – Year 9 Juncture - Time, Continuity and Change

- Evidence of events in Australian, Asian, Pacific and global settings can be interpreted from different perspectives and values positions
- Immediate and long-term consequences of human activity can be predicted by considering past and present events

How does the process of Environmental Impact Assessment apply to the forestry industry?

SOSE – Year 7 Juncture - Place and Space

- Natural hazards are a result of natural processes, and human activity can affect the impacts of these occurrences

SOSE – Year 9 Juncture - Place and Space

- Interrelationships between human activity and environments result in particular patterns of land and resource use, and can cause environmental problems

How are Australian forests managed?

SOSE - Year 7 Juncture – Place and Space

- Sustainability requires a balance between using, conserving and protecting environments, and involves decisions about how resources are used and managed
- Australian environments are defined by patterns of natural processes, by human activities and by the relationships between them, including climate and natural resource distribution, resource use, and settlement patterns

SOSE – Year 7 Juncture – Political and Economic Systems

- Australia is connected to other nations through international agreements, the responsibilities of global citizenship, and shared commitments to security and environmental issues

The Styx valley campaign:

- **What?**
- **Where?**
- **Who?**
- **How?**

SOSE – Year 7 Juncture – Place and Space

- Australian environments are defined by patterns of natural processes, by human activities and by the relationships between them, including climate and natural resource distribution, resource use, and settlement patterns

SOSE – Year 7 Juncture – Political and Economic Systems

- Australian citizenship involves values, attitudes and actions related to political equality and civil and human rights

SOSE – Year 9 Juncture – Time, Continuity and Change

- Evidence of events in Australian, Asian, Pacific and global settings can be interpreted from different perspectives and values positions

How can we take action to conserve the forests in our local area?

- **forestry practices/conservation**
- **awareness of the need to protect and maintain the biodiversity and genetic variation of forests**

SOSE – Year 9 Juncture – Place and Space

- Australia, the Asia-Pacific region and other global settings are defined by a range of natural characteristics and processes, including landforms, vegetation and climatic zones, and human activities, including cultural, economic and political activity
- Interrelationships between human activity and environments result in particular patterns of land and resource use, and can cause environmental problems
- Governments and communities need to balance economic, social, political and environmental factors through sustainable development, consumption and production

Science – Year 7 Juncture – Science as a Human Endeavour

- Scientific knowledge can help to make natural, social and built environments sustainable, at a scale ranging from local to global

Science – Year 9 Juncture – Life and Living

- Changes in ecosystems have causes and consequences that may be predicted

Module outline

Investigation Phase and focus questions	Learning Activities/	Resources
Tune In <ul style="list-style-type: none">• What does cutting down forests in South East Asia have to do with me?	<ul style="list-style-type: none">• Interpreting environmental cartoons• Smog! News reports and Brink interviews• Completing and discussing a personal actions checklist	<ul style="list-style-type: none">• Resource 1: Environmental Cartoons• Resource 2: News Reports• Resource 3: Personal Actions Checklist• Resource 4: Human Use of Rainforest Products
Explore <ul style="list-style-type: none">• What do I already know?• What do I want to find out?	<ul style="list-style-type: none">• Starting the KWL activity	<ul style="list-style-type: none">• Resource 5: KWL Chart

<p>Look</p> <ul style="list-style-type: none"> • Where are the world's rainforests? • How have patterns of deforestation occurred over time? • Who buys tropical rainforest timber? • Can forests be sustainably managed? 	<ul style="list-style-type: none"> • Map work: Where are the world's rainforests? • Analysing statistics: <ul style="list-style-type: none"> ◦ Global and SE Asia Deforestation ◦ Tropical timber trade • A Case Study of the Sustainable Forest Management Project in Sabah, East Malaysia • Mini-investigation: Conducting an audit of shop products 	<ul style="list-style-type: none"> • Resource 6: Blank World Map • Resource 7: How Have Patterns of Deforestation Changed Over Time? • Resource 8: Who Buys Tropical Rainforest Timber? • Resource 9: TELSTAR investigation
<p>Sort</p> <ul style="list-style-type: none"> • What are the different values (uses) of rainforests? • How do indigenous groups in S E Asia value forests? • How are the demands for forest products balanced with other uses and values? 	<ul style="list-style-type: none"> • Values of a rainforest • Decision making activity: Trees – your money or your life?! • Mini-investigation: Sorting the results of the shop audit 	<ul style="list-style-type: none"> • Resource 10: Values of a Rainforest • Resource 11: Tree Template • Resource 12: Monetary and Non-monetary values
<p>Test</p> <ul style="list-style-type: none"> • What are the social, environmental, cultural and economic impacts of deforestation in S E Asia? 	<ul style="list-style-type: none"> • Futures wheel 	<ul style="list-style-type: none"> • Resource 13: Rainforest Futures Wheel
<p>Act</p> <ul style="list-style-type: none"> • What can be done to reduce deforestation? • How can I take action to conserve the forests of S E Asia? 	<ul style="list-style-type: none"> • Mini-investigation: Presenting the result of the shop audit • Debate 'Should Australia ban the import of all rainforest timber?' • Personal action statement 	
<p>Reflect</p> <ul style="list-style-type: none"> • What do I think? • What do I now know? 	<ul style="list-style-type: none"> • Values continuum activity • KWL chart 	<ul style="list-style-type: none"> • Resource 14: Values statements

Teaching and learning sequence

INTERPRETING ENVIRONMENTAL CARTOONS

- Divide students into pairs and give each student one of the cartoons in Resource 1. Ask them to look at the cartoon without showing their partner. After a few minutes ask students to interpret their cartoon for their partner. Remind students that they are not just giving a simple description but also to consider such questions as:
 - What is the issue represented by the cartoon?
 - Who are the characters in the cartoon?
 - What is the cartoon saying?
 - Why has the cartoonist chosen these captions?
- As a class ask the students to:
 - brainstorm alternative captions for the cartoons
 - focus on Cartoon 1: 'Lifecycle of a tree' and brainstorm other ways in which trees or tree products are used by humans.
 - focus on Cartoon 2: 'On a clear day' and brainstorm other impacts of clear felling trees.
 - consider which of the two cartoons means the most to them.

SMOG! NEWS REPORTS

- Note to teachers: Additional information on the South East Asian forest fires can be found on pages 120 – 127 of Manuel, Mark, McElroy, Barrie and Smith, Roger, 1999, *Environmental Issues*, Cambridge University Press.
- Distribute copies of Resource 2 to students. After reading the reports discuss the following questions:
 - Do both reports agree on the cause of the smog?
 - Why do you think officials prefer to call the problem 'haze' rather than 'smog'?
 - What are the impacts of the smog?
 - How are people dealing with the problem?
 - Find out what 'peat' is and explain why the problem is greatest in peat areas.

PERSONAL ACTIONS CHECKLIST

- Note to teachers: As this activity will be revisited at the Reflect stage of the investigation, the questions will not be shown at this point of the investigation. At the Reflect stage, students will be asked to identify alternatives and possible actions they might take in response to the issue.
- Ask students to complete the personal actions checklist in Resource 3.
- Prepare the debriefing by cutting Resource 4 into cards. Divide the students into groups of 4 and distribute one set of cards to each group. Students take turns to read out their response to each of the items and to find the card that corresponds to the item. Students read the information on the card to the rest of the group. [alternatively the teacher can read the statements to the class]
- Class discussion: What does cutting down forests in South East Asia have to do with me?

KWL CHART

- Note to teachers: At this stage teachers may like to refer back to the Brink Adventures Curriculum Module 2 - "Indigenous Americans: Yanomami people" - to revise rainforest concepts. Or, if this module has not been completed, teachers can get students to access suitable web resources e.g.
Save our earth http://www.saveourearth.co.uk/soe_raininfo.htm
Rainforest Action Network http://www.ran.org/info_center/about_rainforests.html
Rainforestweb.org http://www.rainforestweb.org/Rainforest_Information/
- Distribute Resource 5 to the students and ask them to complete the first two columns:
 - What do I already know about rainforests?
 - What do I want to find out?
- Explain that the KWL will be revisited and the last column completed at the end of the module for students to reflect on what they have learned.

MAP WORK: WHERE ARE THE WORLD'S RAINFORESTS?

- Distribute a copy of the blank world map (Resource 6) to each student.
- Using atlases get students to find and mark each of the following countries on the map to indicate the distribution of rainforests:

Australia (Northern)	India	Paraguay
Brazil	Indonesia	Peru
Cambodia	Ivory Coast	Philippines
Cameroon	Laos	Solomon Islands
Colombia	Madagascar	Suriname
Congo	Malaysia	Thailand
Costa Rica	Mozambique	Vietnam
Ecuador	Myanmar (Burma)	Venezuela
Gabon	Nigeria	Western Samoa
Ghana	Panama	Zaire
Guyana	Papua New Guinea	

- Ask students to write a paragraph which describes the pattern of rainforest distribution using geographical terminology.

ANALYSING STATISTICS:

- Note for teachers: The following activities involve students manipulating and presenting statistical data. You may need to revise the relevant mathematical and graphing skills at this stage.

(a) GLOBAL AND ASIA PACIFIC DEFORESTATION

- Distribute copies of Resource 7 and ask students to read and complete the tasks.

(b) TROPICAL TIMBER TRADE

- Download or bookmark the following pre-readings for students:
 - Illegal Logging in Indonesia, South East Asia and International Consumption of Illegally Sourced Timber
<http://www.eia-international.org/cgi/news/news.cgi?t=template&a=28&source>
 - China's Chopsticks Crusade Feeds Environmental Movement
<http://forests.org/archive/asia/chchcrus.htm>
- Distribute copies of Resource 8, discuss the data and tasks.

MINI-INVESTIGATION: CONDUCTING AN AUDIT OF SHOP PRODUCTS

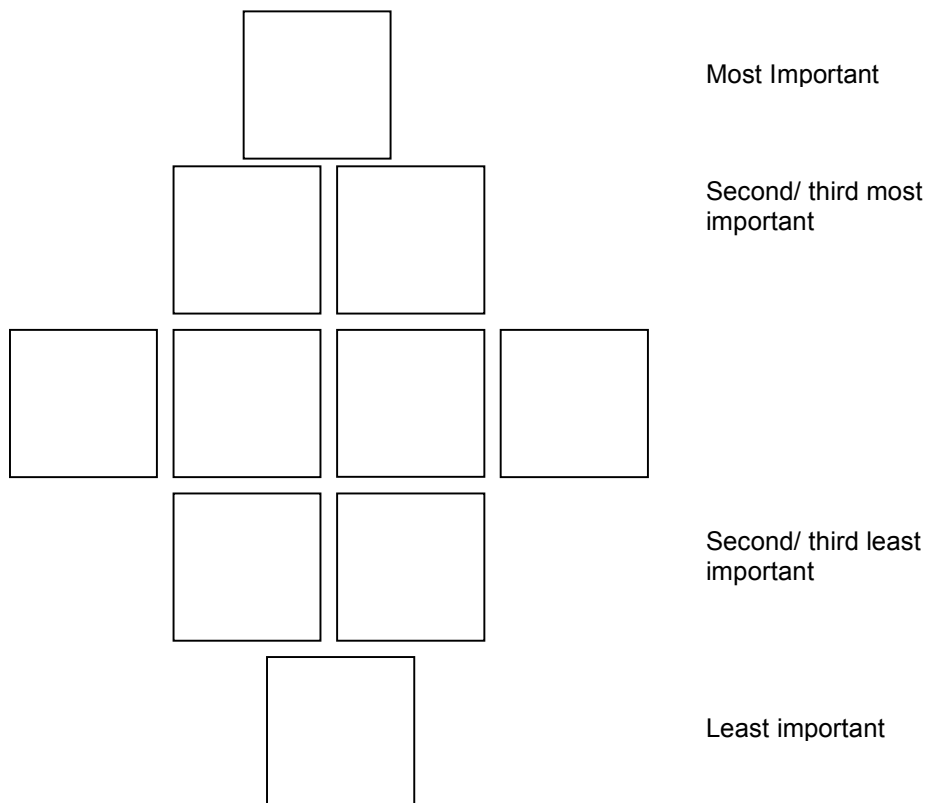
- Note to teachers: The aim of this activity is to conduct fieldwork in the local area to discover the range of products that originate in rainforests. Suitable shops for the audit are:
 - local supermarket
 - hardware store
 - gift shop
 - chemist
 - cosmetics shop (e.g. The Bodyshop)

However, it is strongly advised that you first determine that this activity is possible in your local area and establish a relationship with the shop owners that the students will be able to get permission to visit the shop to conduct the research. Check with your education authority guidelines regarding health and safety aspects of fieldwork activities.

- Explain to students that many of the products that they find in their local shop may come from the rainforests in South East Asia. Explain that the task is to conduct an investigation into rainforest products in their local shop. Students may do this as a group or individual task. Provide copies of Resource 9 as a model of the investigation process.

VALUES OF A RAINFOREST: DIAMOND RANKING

- Note to teachers: Prepare this activity by cutting up the cards on Resource 10: Values of a rainforest and putting each set of cards into an envelope. You will need one set for each group of students.
- Distribute one set of cards to each group. Ask them to open the envelope and lay each card face down.
- Students take it in turns to pick a card and read it to the rest of the group.
- Once all the cards have been read, ask the students to decide which of these values they consider to be most important and which the least important. Students place these cards in the following diamond ranking arrangement:



- Students then decide on the second and third important and least important and place them according to the diagram. The remaining cards are to be placed on the third level of the diamond as shown.
- Ask students to share their decision with the rest of the class and the reasons for their decisions.

DECISION MAKING ACTIVITY: TREES - YOUR MONEY OR YOUR LIFE!

- Note to teachers: The aim of this decision making activity is to demonstrate to students the concept of Opportunity Cost i.e. the alternative which is foregone when a particular option is selected. Students will become aware that there are multiple uses of a particular resource and by choosing to use it in a particular way they forego the other uses of that resource. It is important to note that in this case the other uses are difficult to measure in monetary terms. To prepare for this activity, print and cut out 9 copies of the tree template on Resource 11. You will need one set for each group of students. Mark the back of each template with a number corresponding to the name of a rainforest tree from Resource 12. Also mark the revenue from the market price of this tree's timber.
- Distribute the set of tree templates to the students and ask them to place them with the tree side up.
- Explain to the students that the trees represent the resources in a rainforest and that they are to decide which of the five trees they will harvest for timber.

- As each tree is chosen the students should turn the template and note down how much revenue they will gain by harvesting the tree for timber.
- At the end of the selection explain to students the concept of opportunity cost and that each of the trees has multiple uses. Explain what the alternative uses of each tree that they have selected are.
- As a class discuss the following questions:
 - Is it possible to put a price on some of the other uses? If so what would it be?
 - Is the tree more valuable economically by not cutting it down?
 - Would you change their selection based on this new information.

FUTURES WHEEL

- Distribute copies of Resource 13: Rainforest Futures Wheel to the students.
- Explain that the statement in the centre of the wheel is an example of an environmental issue that will have impacts in the future.
- Students brainstorm the possible consequences of this event – an example has been provided. These are the first order consequences. Consequences arising from the first order consequences are called second order consequences. It is possible that students may be able to come up with third order consequences.
- Students mark all the consequences they can think of on the wheel.
- Students should then discuss their wheels and identify the positive and negative effects as well as suggesting possible solutions.

DEBATE 'SHOULD AUSTRALIA BAN THE IMPORT OF ALL RAINFOREST TIMBER?'

- Background information for teachers: In 1990 The Australian Democrats introduced a Bill into Parliament to ban the import of rainforest timber. It was defeated by the combined vote of both Labour and the Coalition parties. More information can be found at:
 - Cabinet to Decide Soon on Rainforest Wood Ban <http://forests.org/archive/spacific/ozban.htm>
 - The Timber Mafia <http://www.abc.net.au/4corners/stories/s638154.htm>
- Organise a class debate on this issue. Background information on the conventions of debating can be found at <http://www.sfu.ca/cmns/130d1/HOWTODEBATE.htm>

PERSONAL ACTION STATEMENT

- Ask students to return to the Personal Actions Checklist they completed at the beginning of the module (Resource 3).
- Using the knowledge they have gained from the module ask students to design and illustrate their own 'Charter' for conserving the rainforests.

- What are the alternatives to the actions they currently take? What can they do or stop doing to help conserve the forests.
- Mount a class display of the 'charters'.

VALUES CONTINUUM ACTIVITY

- Distribute copies of Resource 14: Values statements to students.
- Discuss the students' responses as a class and ask them if their opinions may have changed throughout the module.

KWL CHARTS

- Ask students to return to the KWL chart they started at the beginning of the module (Resource 5). They should now complete the final column of the chart 'what have I learned' using the information they have gained from the module.