

Environment and development: World environments

Strand

Place and Space
Systems, Resources and Power

Core learning outcomes

<i>Place and Space</i>	PS 5.1	Students synthesise information from the perspectives of different groups to identify patterns that constitute a region.
	PS 5.2	Students design strategies for evaluating environmental impacts of a proposed project, highlighting relationships within and between natural systems.
	PS 5.4	Students use maps, diagrams and statistics to justify placing value on environments in Australia and the Asia–Pacific region.
	PS 5.5	Students evaluate ideas concerning sustainability to identify who may benefit and who may be disadvantaged from changes to a Queensland industry.
<i>Systems, Resources and Power</i>	SRP 5.1	Students evaluate the relationship between an ecological system and a government and/or an economic system.
	SRP 5.3	Students use a structured decision-making process to suggest participatory action regarding a significant current environmental, business, political or legal issue.

Purpose and overview

Activities assist students to work towards demonstrating the core learning outcomes through the exploration of a controversial proposal — the Naturelink cableway linking the Gold Coast with Springbrook, part of a World Heritage rainforest area. Students make decisions about the proposal and design a media-based presentation to convey their decisions.

Students consider data from the environmental impact statement for the Naturelink project and undertake their own environmental impact investigation. This process will highlight the intersection of environmental, economic, social, political and cultural factors. Students are assisted to understand how different views and interests can produce different attitudes to planned projects.

This module focuses on a single case study — the Naturelink cableway controversy. The proposal to locate a commercial development within a World Heritage area allows the broader issues of world environments to be explored in microcosm. Investigations will assist students to experience decision-making processes.



Phases (Minimum time recommended: 12 hours)	Activities	Core learning outcomes	Assessment opportunities
1. Exploring the issue (approximately 5 hours)	1. Exploring the cableway project issues 2. Exploring ecological sustainability 3. Exploring the impact of the cableway 4. Defining regions 5. Exploring interest in the cableway	PS 5.1 PS 5.4 PS 5.5	Oral presentations Definition of a region Observation Group reports
2. Investigating the impact of the proposed cableway (approximately 4 hours)	6. An environmental impact statement 7. Conducting an environmental impact investigation	PS 5.1 PS 5.2 PS 5.4 SRP 5.1	Environmental impact statement, investigation and report
3. Making judgments, taking action (approximately 3 hours)	8. Advocacy 9. Reality check	SRP 5.1 SRP 5.3	Participation in discussions to reach consensus Group oral reports Participation in developing an advocacy event

Assessment

The assessment opportunities outlined are examples of how to assess students' demonstrations of the identified learning outcomes. As often as possible, negotiate assessment with students and support a variety of ways of demonstrating the learning outcomes. Reflect with students on evidence gathered when making judgments about their demonstrations of learning outcomes. Some students may require more time and/or other contexts in which to demonstrate these learning outcomes. Other modules may provide such time and/or contexts and the 'Levels 1 to 6 module learning outcomes maps' in the *Years 1 to 10 Studies of Society and Environment Sourcebook Guidelines* can be used to identify these modules.

The environmental impact statement provides opportunities to assess most of the core learning outcomes.

Assessing learning outcomes at different levels

Activities are designed primarily for students working towards demonstrations of Level 5 learning outcomes. Some assessment opportunities may be used to decide whether students are demonstrating the learning outcomes at levels before or after Level 5. To guide judgments about students' demonstrations of learning outcomes consider whether students are:

- working towards demonstrations of the Level 5 learning outcomes
- demonstrating the Level 5 learning outcomes
- demonstrating the Level 5 learning outcomes and working towards Level 6 learning outcomes.

Learning outcomes in the syllabus at Level 4 and Level 6 could provide a guide for teacher judgments. Studies of Society and Environment learning outcomes are organised so that there is a progression of concepts and processes within a strand. For example, the progression from PS 4.5 to PS 5.5 then PS 6.5 involves increasing sophistication and complexity particularly related to the concept of *significance of place* and the process of *reflecting*, though neither of these is exclusive of other concepts and processes. The elaborations provide specific content examples of how the concepts and processes may be levelled from Levels 1 to 6. See the Queensland School Curriculum Council website at www.qscc.qld.edu.au for more information.

Using this module

This module explores the impacts of development on the environment. The controversial proposal to develop a cableway to link the Gold Coast with the Springbrook hinterland is investigated to model how to evaluate the impacts of such projects. Search the Web for information about this project that was stopped by the State Government on 8 November 2000. Other development projects more relevant for students could be explored.

Background information

Terminology

In this module students have opportunities to become familiar with and use the following terminology:

biodiversity	global	sustainable development
bioregion	green politics	tourism
conservation	heritage	treaty
ecological sustainability	international responsibility	values
ecology	local government	World Heritage
economy	perspectives	
environment	progress	
environmentalism	statutory authorities	

School authority policies

Be aware of and observe school authority policies that may be relevant to this module, particularly those relating to field studies.

Equity considerations

Activities take place in a supportive environment. They provide opportunities for students to increase their understanding and appreciation of equity through valuing diversity and challenging inequities. Activities encourage students to:

- recognise competing interests in a pluralist society and develop strategies for resolving these democratically and with concern for economic and ecological sustainability
- value and conserve natural environments.

Some students with disabilities may need assistance with some activities. Advice should be sought from their support teachers.

It is important that these equity considerations inform decision making about teaching strategies, classroom organisation and assessment.

Links

Studies of Society and Environment

This module is one of a suite of modules for Levels 1 to 6. See the Queensland School Curriculum Council website at www.qscc.qld.edu.au for more information.

This module has conceptual and process links to the following modules:

- Level 4: *Changing places: Changing global environments*
- Level 4: *Resources rich and rare: Australian resource management*
- Level 5: *A question of balance: Australian environments*
- Level 5: *Urban ecology: Ecology and economy*
- Level 6: *Managing the future: Australian environments*
- Level 6: *Asia–Pacific challenges: World environments.*

Other key learning areas

Activities may offer opportunities for planning across key learning areas. However, it is important that the integrity of the key concepts, organising ideas and processes within key learning areas is maintained.

Evaluation of a unit of work

After completion of units of work developed from this module, collect information and make judgments about:

- teaching strategies and activities used to progress student learning towards demonstrations of core learning outcomes
- opportunities provided to gather evidence about students' demonstrations of core learning outcomes
- future learning opportunities for students who have not yet demonstrated the core learning outcomes and to challenge and extend those students who have already demonstrated the core learning outcomes
- the extent to which activities matched needs of particular groups of students and reflected equity considerations
- the appropriateness of time allocations for particular activities
- the appropriateness of resources used.

Information from this evaluation process can be used to plan subsequent units of work so that they build on, and support, student learning. The evaluated units of work may also be adapted prior to their reuse. For further information, refer to the 'Curriculum evaluation' section in the sourcebook guidelines.

Activities

Phase 1 Exploring the issue

Core learning outcomes emphasis: PS 5.1, PS 5.4, PS 5.5

Students explore issues in relation to a proposed project to build a cableway in a World Heritage rainforest area. The diverse interest groups involved in the Naturelink cableway proposal are introduced and students explore the values and perspectives associated with each interest group.

Focus questions:

- What are the issues that relate to the cableway project in the Gold Coast hinterland?
- What is ecological sustainability?
- What are the different ways in which a 'region' can be defined?
- Is the Springbrook area part of the Gold Coast region? Why?
- What advantages do some people believe the cableway project would bring?
- What disadvantages do some people believe the cableway project would bring?

Activity 1 Exploring the cableway project issues

Use the Tourism Queensland website to locate maps and text that highlight attractions in South-East Queensland and the Gold Coast region in particular. Ask students to locate Springbrook in relation to Surfers Paradise and to explain why it might be popular with tourists. Assist students to refer to maps and statistics to justify their answers. Discuss what values might be placed on this particular environment.

Ask students to imagine they are holidaying on the Gold Coast and have used a cableway to travel from the coast through the national park to Springbrook. They have enjoyed the scenery, taken a walk through the rainforest and had a meal at the Skyway Café, before making the return journey.

Ask students to design a postcard and write a message describing this experience and highlighting some of the things they enjoyed most. Students swap and read each others' postcards. Display the postcards around the room.

Discuss the postcard messages and the different aspects described by students — for example, beautiful vegetation, walking, seeing birds and animals, the thrill of travelling so high, meeting other tourists, the marvel of technology. Discuss and list the advantages of being able to access this site by a cableway.

Ask students to consider why people might object to the building and running of the cableway. Develop a second list highlighting possible disadvantages of such a cableway.

Explain that a cableway project has been proposed and that students will be investigating this proposal and making recommendations about whether the project should proceed.

Activity 2 Exploring ecological sustainability

Introduce the concept of ecological sustainability. Choose a variety of environments around the world in which to explore this concept. Distribute/arrange access to maps, diagrams, statistics and photographs of the environments chosen. Assist small groups of students to analyse the sources and create a list of reasons why these environments could be valued. Ask each group to report its findings. If possible, provide some historical background about the areas that illustrates how use of the environment impacts on the sustainability of livelihood, heritage, culture and standard of living.

Ask small groups of students to discuss and suggest a definition of ecological sustainability. Use these suggestions to write a class definition.

Activity 3 Exploring the impact of the cableway

Use understandings of ecological sustainability to explore the impact of the proposed cableway. Provide the sentence starter: 'The cableway project could be ecologically sustainable if ...'. Use the 'think/pair/share' strategy to complete the sentence. Encourage students to consider environmental and social issues, such as human access and the impact on surrounding environments.

Activity 4 Defining regions

Display maps of Queensland that show some or all of the following 'areas': Atherton Tableland, the Channel Country, Burrum Shire, the Daintree, the Central Coalfields, Surfers Paradise and the Sunshine Coast. Explain that each of the areas could be called a 'region' and discuss which feature defines each region. Refer to atlas maps and assist students to identify the following features: topography (the Atherton Tableland), rivers (the Channel Country), political boundaries (Burrum Shire), vegetation (the Daintree), resources/economy (the Central Coalfields), leisure/culture (Surfers Paradise) and climate (the Sunshine Coast).

Display maps of different types of Queensland regions — for example, bioregions, council shires, geological regions and tourism zones — and use them to illustrate that an area may be defined as part of many different regions.

Ask students to consider the 'region' in which they live and to decide where the regional boundaries could be drawn.

Display maps of the Gold Coast/Springbrook area and discuss how regional boundaries may be defined in different ways, depending on the features/patterns focused on and the perspective of the group identifying the features/patterns of a region. Discuss aspects that may influence how a region is defined, such as bioclimate, culture, ecology, economy, ethnicity, governments, interest groups and treaties.

Activity 5 Exploring interest in the cableway

Resource 1

Use the statements and instructions on Resource 1 to introduce a diamond ranking activity in which students explore the different groups that may have an interest in the proposed cableway.

Invite students to compare and discuss their arrangement of statements. Discuss the impact the cableway may have had both locally and regionally.

Phase 2 Investigating the impact of the proposed cableway

Core learning outcomes emphasis: PS 5.1, PS 5.2, PS 5.4, SRP 5.1

Students use social and environmental inquiry processes (outlined in the 'Social and environmental inquiries' section of the syllabus) to conduct an environmental impact investigation of the proposed cableway. This phase concludes with students attempting to reach a decision about whether the cableway project should proceed.

Focus questions:

- What is an environmental impact statement (EIS)?
- How can data be collected for an EIS?
- Based on data about one aspect of the project, should it proceed?
- Based on the combined data on a number of aspects of the project, should it proceed?
- What environmental, economic, social, political and/or cultural issues are revealed in this investigation?

Activity 6 An environmental impact statement

Explain that as part of the planning for a proposed development such as the cableway, an investigation into the impact of the proposal must be undertaken. Such investigations are carried out by specialists who prepare an environmental impact statement (EIS).

Set the scene for students to become 'specialists' and undertake an environmental impact investigation by explaining that the Naturelink project involved establishing a cableway operation between Mudgeeraba and Springbrook in the Gold Coast hinterland. The proposed route included National Park land, State Forest reserves, private freehold land and the Hinze Dam catchment area controlled by the Gold Coast City Council.

Explain that the environmental impact investigation will involve exploring the impacts the proposed project may have on the environment and providing a report on any adverse impacts. If possible, share an example of an environmental impact statement about another area with students.

Activity 7 Conducting an environmental impact investigation

Assist students to frame questions for investigation.

Use a table such as the following to assist students to plan how they will investigate the possible environmental impact of the project. Ask individual students or small groups to choose one method of investigation.

Planning an environmental impact investigation	
Investigating the possible impact of the Naturelink Cableway Project	
Focus question:	
Possible method of investigation	Details
Visit the proposed site to make observations	
Conduct experiments, measurements or tests in the area	
Gather advice from experts	
Find out about similar projects elsewhere	
Survey large numbers of people	
Any other methods	

Assist students to begin their investigations. Once data is collected, assist students to plan their report and discuss how to use maps, diagrams, statistics and expert advice to support the arguments, conclusions and recommendations in their report.

As an alternative, use an environmental impact statement about the Naturelink project or another project and assist students to critique it. Students could prepare an oral report on the aspect critiqued.

Phase 3 Making judgments, taking action

Core learning outcomes emphasis: SRP 5.1, SRP 5.3

This phase provides students with opportunities to come to a decision about whether the cableway project should proceed. Students also make choices about how to publicise and advocate for the decision they have reached about the cableway. As a teaching, learning and assessment opportunity, the focus is on:

- the use of structured decision-making processes
- the cooperative role of each student in the group tasks
- the use of researched knowledge to inform the group's advocacy event
- the effectiveness of the advocacy event in conveying the group's position to an audience.

Focus questions:

- What future scenarios are likely to emerge if the cableway project goes ahead?
- How can the research, decision making and reflection in previous phases inform a decision about the cableway project?
- How can an opinion about the cableway project be publicised effectively through an advocacy event?

Activity 8 Advocacy

Assist students to use data from their environmental impact investigations and statements to assess whether the proposed project should proceed. Consider and discuss the findings, explanations, questions, supportive comments and objections. Discuss the complex and debatable nature of the issue. Assist students to critically assess the recommendations made in their reports (Activity 7). Discuss whether these recommendations could be implemented. Rate recommendations as highly likely, likely, highly unlikely in relation to implementation. Collect and collate the assessments. Discuss the opinions and debate the proposal in a balanced way (that is, consider all the values and elements and weigh up the issues) and reach a consensus about whether the project should proceed or not. Assist students to make a recommendation. If students do not reach consensus, they can deliver 'mixed' recommendations reflecting their conflicting views.

Assist small groups of students to plan an advocacy event in which they explain and promote their consensus view — for example, through a current affairs program, poster campaign, public meeting, magazine advertisement, website or public demonstration. Explain that the event must present the issues in a way that acknowledges different views, while strongly advocating the particular view adopted. Reasons presented must be clear and supported by evidence.

Activity 9 Reality check

Assist students to locate historical and current resources about the Gold Coast and Springbrook areas (see Support materials and references). Compare aspects of the areas from past and present perspectives.

Assist students to search the Web to locate information about the Naturelink project. If possible, include media coverage. Discuss why the project was rejected. Ask students to consider whether past and present management of the area was considered by the people who proposed the project. Use the sources to identify and list the environmental concerns and economic interests that were raised. Ask small groups of students to discuss how they think the Government may have evaluated the environmental and economic issues when deciding to reject the proposed project. Ask students to present their ideas in a diagram and to explain whether the environmental issues balanced or outweighed the economic interests.

Assist students to reflect on their findings about the impacts of the proposed development within a World Heritage rainforest area. Discuss how their investigations and findings could be used to consider the impact proposed or current developments in other World Heritage areas might have on environmental, economic, social, political and/or cultural factors.

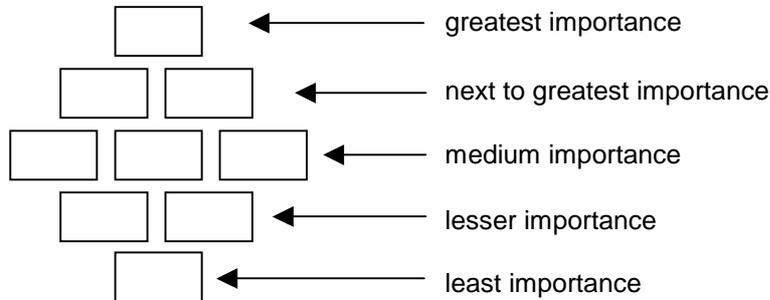
Support materials and references

Comparing decisions

Resource 1

Distribute the following nine statements on separate pieces of paper.

Students use the diamond ranking system to arrange the nine statements in order of importance.



1. We live at Springbrook and love the peace and unspoiled beauty of the rainforest.
2. We live at Surfers Paradise and often drive up to Springbrook for a picnic.
3. The water supply for the Gold Coast depends on the streams that flow from the mountains around Springbrook.
4. The cableway will provide a safe way to travel through Springbrook, instead of the dangerous and winding road.
5. I own a business in Springbrook. Extra tourists will increase my sales.
6. People who currently bushwalk in Springbrook won't like the crowds of tourists who'll come up by cableway.
7. I run a tourist agency. I think many of my clients will want to include the cableway in their holiday.
8. I'm a medical scientist. I believe many important medicines can be developed from plants found in the rainforests in the Springbrook area.
9. I own the cableway company. When we're up and running, we'll employ 48 people, most of them locals.

Support materials and references

Alexander, A. & Rouen, M. 1999, *SOSE for Queensland Books 1, 2 and 3*, Heinemann, Port Melbourne, Vic.

Eshuys, J. et al. 1998, *Society and Environment Book 3*, Universal Publishing, Noosaville, Qld.

Hardie, N., Rutherford, M. & Walsh, J. 1995, *Participating in Our Society*, 2nd edn, Addison Wesley Longman, South Melbourne, Vic.

McCauley, D., Brown, P. & Mills, M. 2000, *SOSE 1 for Queensland*, Jacaranda Wiley, Milton, Qld.

McCauley, D., Brown, P. & Mills, M. 2000, *SOSE 3 for Queensland*, Jacaranda Wiley, Milton, Qld.

Miles, S. & Van Berendonk, J. 1996, *Australia: Studies of Society and Environment*, Hodder Education, Sydney.

Society and Environment Atlas 1996, Jacaranda Wiley, Milton, Qld.

VASST 1996, *New Perspectives in Social Education 3*, Cambridge University Press, Melbourne.

Websites

(All websites listed were accessed in June 2002.)

Environment

Australian Conservation Foundation www.acfonline.org.au/

Australian Student Environment Network. www.asen.org.au/index.html

Bureau of Rural Sciences Australia. www.affa.gov.au

(Under 'Finding the information you need', scroll down 'Select by specialist area' to find link to Bureau of Rural Sciences.)

Environment Australia. www.ea.gov.au/

Environmental Organisation Web Directory. www.webdirectory.com/

Gold Coast and Hinterland Environment Council. <http://www.gecko.org.au/>

GreenPeace. www.greenpeace.org/

Land and Water Australia. www.lwrrdc.gov.au/

National Environment Protection Council. www.nepc.gov.au/

Queensland Environmental Protection Agency. www.epa.qld.gov.au/

State Library Queensland, *Environment Resources*. <http://netlinks.slq.qld.gov.au/help.htm>
(Type in 'environment resources' for an extensive list of links to environment websites.)

The Australian Environmental Education Network.
www.environment.gov.au/education/aeen/

United Nations Environment Programme. www.unep.org/

World Heritage Information Network. www.bigvolcano.com.au/natural/whin.htm

Government

Australian Local Government Information Network. www.algin.net.au/

Councils on the Web. www.algin.net.au/cnclist.htm

Parliamentary Education Office. www.peo.gov.au/home.htm

Queensland Government Department of State Development. www.statedevelopment.qld.gov.au/

Industry interest groups

Australian Minerals and Energy Environment Foundation. www.ameef.com.au/

WMC (Australian-based minerals producer with business interests in 19 countries).
www.wmc.com.au/sustain/index.htm

World Business Council for Sustainable Development. www.wbcsd.ch/

Mapping and statistics

Australian Bureau of Statistics. www.abs.gov.au/

Australian Rail Maps. www.railpage.org.au/railmaps/

Australia's National Mapping Division. www.ausliq.gov.au/

Axion Spatial Imaging. www.axionspatial.com/

Bureau of Meteorology Home Page. www.bom.gov.au/

Geoscience Australia. www.agso.gov.au/map

Interim Biogeographical Regionalisation for Australia.
www.ea.gov.au/parks/nrs/ibraimcr/ibra_95/

Lonely Planet, *Map of Australia*. www.lonelyplanet.com.au/dest/aust/graphics/map-aus.htm

National Geographic, *Map Index*. www.nationalgeographic.com/maps/index.html

National Geographic, *Map Machine*. www.plasma.nationalgeographic.com/mapmachine/

Queensland State Library, *Maps*. <http://netlinks.slq.qld.gov.au/rfmp.htm>

your nation. www.your-nation.com/
(statistical information by country)

Tourism

Australian Tourist Commission. www.atc.net.au/

Australian Tourism Net. www.atn.com.au/

Tourism Queensland. www.tq.com.au/

Other

Aboriginal and Torres Strait Islander Commission (ATSIC). www.atsic.gov.au/

Indigenous Land Corporation. www.ilc.gov.au/

Queensland State Library, *QueenslandWeb*. www.slq.qld.gov.au/qldweb.htm

This sourcebook module should be read in conjunction with the following Queensland School Curriculum Council materials:

Years 1 to 10 Studies of Society and Environment Syllabus

Years 1 to 10 Studies of Society and Environment Sourcebook Guidelines

Studies of Society and Environment Initial In-service Materials

ISBN 0 7345 2299 1

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