

*the victorian forest
industries explorer*

TEACHERS' GUIDE



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Introduction

The Forest Industries Explorer was developed by the Victorian Association of Forest Industries in 2006 as a means to provide simple, concise information on Victoria's forests, how they are sustainably managed and the resources, products and services they provide.

This guide has been developed to accompany the Victorian Forest Industries Explorer interactive CD. It is aimed at outlining the educational possibilities of the Forest Industries Explorer and suggesting how you can use it with your students.

The Forest Industries Explorer provides a solid starting point for students to explore Victoria's native forest industries, and is structured to be supportive of student directed projects and research. The Forest Industries Explorer is a multidimensional resource, and can be used across all learning levels, from Level 5 Geography through to VCE Environmental Science.

This guide was written with assistance from a number of teachers and education coordinators to ensure that it is a relevant and valuable resource for teachers and schools.

The activities suggested in this guide have been selected to enable students to demonstrate a number of the core learning outcomes of both the VELS and VCE curriculum. The activities encourage:

- Physical, personal and social learning, particularly in the area of personal learning.
- Discipline based learning within the arts and humanities, especially geography.
- Interdisciplinary learning across all areas, including communication, design, creativity and technology.

Each section of this guide includes a link to the VELS or VCE curriculum, and a 'classroom' section that points you to the most relevant sections of the Forest Industries Explorer and suggests questions and activities for your classroom.

We hope you enjoy your tour of Victoria's forest industries!

Level 5 & 6 Geography

Level 5 Geography

VELS Link

“Students explore how and why, over time, human and physical interactions produce changes to the characteristics of regions, for example, settlement patterns and agricultural and urban land use.”

“Students investigate environmental issues such as forest use and global warming. They begin to design policies, and evaluate existing policies, for managing the impact of these issues and ensuring the sustainability of resources.”



Key Ideas

- Global Warming and Climate Change
- Sustainable Land Management and Use

In the Classroom – Global Warming

Relevant Sections of the Forest Industries Explorer:

- Dimensions of Sustainability

Key Questions:

1. What is the Greenhouse Effect?
2. How can forests and forest industries help fight global warming?
3. Why is timber considered a greenhouse-friendly product?
4. What is carbon trading?
5. How can forest industries be an important part of carbon trading?

Activities:

1. How can we help combat global warming at home? Using the information provided in The Forest Industries Explorer, design an environmentally friendly house for your family, thinking about things like building materials, energy and greenhouse gas emissions. Draw what this house would look like.
2. Using examples from The Forest Industries Explorer, explore and describe the different dimensions of sustainability that are important to the native timber industry. Present your findings to the class.

Resources:

- The Victorian Greenhouse Strategy:
www.greenhouse.vic.gov.au
- The Cooperative Research Centre for Greenhouse Accounting:
www.greenhouse.crc.org.au
- The Victorian Environmental Protection Authority:
www.epa.vic.gov.au
- The Commonwealth Scientific and Industrial Research Organisation:
www.csiro.au
- The ‘Sustainables’ – Sustainability Challenge for Students:
www.dse.vic.gov.au/thesustainables/



In the Classroom – Forest Management and Land Use

Relevant Sections of the Forest Industries Explorer:

- The Victorian Forest
- Sustainable Harvesting
- Regeneration
- Governance

Key Questions:

1. Who is responsible for the management of Victoria's forests?
2. How can we balance environmental concerns with sustainable timber production?
3. What is sustainable harvesting?
4. How much of Victoria's native forest is harvested each year?
5. How are Victoria's forests regenerated after harvesting?

Activities:

1. Use the Sustainable Harvesting section of The Forest Industries Explorer to examine the timber harvesting process. Draw a flow diagram that illustrates each step of the process and describe what is happening at each step.
2. What is illegal logging? Why do you think illegal logging occurs in some countries? Describe how your attitude has been affected by your research.
3. Harvesting is only one of the ways that forests are used, what other uses besides harvesting are important to people? Write a list of all the uses of Victoria's forests, and which groups of people in the community they might be important to.

Resources:

- VicForests:
www.vicforests.com.au
- The Victorian Department of Sustainability and Environment:
www.dse.vic.gov.au
- VAFI Report – An Overview of Illegal Logging:
www.vafi.org.au/documents/illegalLogging.pdf
- The Department of Agriculture, Fisheries and Forestry – Illegal Logging Report:
www.daff.gov.au/illegallogging
- The UK Illegal Logging Info Group:
www.illegal-logging.info

Level 6 Geography

VELS Link

“Students investigate the interaction of human activities with the natural environment through a study of issues such as global warming and climate change, land degradation and desertification, and air and water pollution. Students develop skills to evaluate the factors contributing to the development of these issues, identify strategies to address them and explore ways of managing them.”

Key Ideas

- Global Warming and Climate Change
- Natural Systems and Human Life

In the Classroom – Global Warming and Climate Change

Relevant Sections of the Forest Industries Explorer:

- Dimensions of Sustainability

Key Questions:

1. How can forests help fight global warming?
2. Why is timber considered a greenhouse-friendly product?
3. What is carbon trading?
4. How important are forest industries in carbon trading schemes?

Activities:

1. What is the Kyoto Protocol? Research the Kyoto Protocol and Australia’s current greenhouse strategy. Conduct a class debate about whether Australia should be part of the Kyoto protocol.
2. Should Australia introduce a carbon trading system? Critically evaluate whether a carbon trading system is the best strategy for addressing global warming in Australia.

Resources:

- Sustainability Victoria:
www.sustainability.vic.gov.au
- The Prime Minister’s Climate Change Program:
www.pmc.gov.au/climate_change
- The National Emissions Trading Taskforce:
www.emissionstrading.nsw.gov.au/
- The Commonwealth Scientific and Industrial Research Organisation:
www.csiro.au
- The National Greenhouse Office – Kyoto Resources:
www.greenhouse.gov.au/international/kyoto/index



In the Classroom – Natural Systems and Human Life

Relevant Sections of the Forest Industries Explorer:

- The Victorian Forest
- Dimensions of Sustainability
- Governance

Key Questions:

- How is Victoria's native forest managed and protected?
- How is the Victorian timber industry regulated?
- How can we achieve a balance between environmental concerns such as biodiversity and timber production?
- What are the consequences, good and bad, of human interaction with Victoria's native forests?

Activities:

1. Using a regional Victorian 'timber town' as a case study, analyse the ways forest industries contribute to the development and survival of regional communities. Explore the social and cultural responsibilities of forest industries for Victorian communities.
2. In small groups, discuss how we can balance environmental concerns with timber production in our forests. Conduct a role play with the following characters:
 - a conservation expert
 - a sawmill owner
 - a member of the lobby group 'Save Our Forests'
 - the mayor of the local council.
3. How would you educate the community about sustainable forest management? Design an advertising campaign for your community.

Resources:

- The Victorian Department of Sustainability and Environment:
www.dse.vic.gov.au
- Timber Communities Australia:
www.tca.org.au
- VicForests:
www.vicforests.com.au
- The National Association of Forest Industries:
www.nafi.com.au
- Timber Towns Victoria:
www.mav.asn.au/ttv

VCE Geography / Environmental Science /
Design and Technology

VCE Geography Unit 1

Area of Study 2: Changes in Natural Environments

Curriculum Link

“On completion of this unit the student should be able to analyse and explain changes in natural environments due to natural processes and human activities.”

Key Knowledge

- The importance of the interactions between natural processes and human activities.
- Types of changes to natural environments produced by natural processes and by human activity.

In the Classroom – Changes in Natural Environments

Relevant Sections of the Forest Industries Explorer:

- The Victorian Forest
- Sustainable Harvesting
- Governance

Activities:

1. In small groups, research the importance of change processes in the evolution and health of Australian forests. Present your findings to the class.
2. Using native forest harvesting as a case study, describe the human processes causing change to natural environments. How is the natural environment changed by timber harvesting? How does timber harvesting compare to farming or mining?
3. Using The Forest Industries Explorer and the internet, research the management policies for forests on two different scales, for example, forest management policies in Gippsland, Victoria and in the Amazon, Brazil. Create a table to compare the significant factors evident in both of the major policies.

Resources:

- VicForests:
www.vicforests.com.au
- World Rainforest Information Portal:
www.rainforestweb.org
- Greenpeace International:
www.greenpeace.org/international/campaigns/forests/amazon
- The National Association of Forest Industries:
www.nafi.com.au
- WWF Australia:
www.wwf.org.au

VCE Geography Unit 2

Area of Study 2: Changes in Human Environments

Curriculum Link

“On completion of this unit the student should be able to analyse and explain changes due to human activities in rural and urban environments.”

Key Knowledge

- The role of governments, organisations, communities and individuals in affecting and managing change.
- The concept and practicality of sustainability in selected rural and urban environments.

In the Classroom – Changes in Human Environments

Relevant Sections of the Forest Industries Explorer:

- Dimensions of Sustainability
- Governance

Activities:

1. Using The Forest Industries Explorer and the internet, research the definition of sustainability. Define sustainability in terms of its economic, environmental, social and political aspects. Give examples of each. Prepare a written report.
2. How important are native forest industries to the rural economy? What are some of the possible repercussions of not having the industry? Create a table that illustrates your findings.

Resources:

- Sustainability Victoria:
www.sustainability.vic.gov.au
- VicForests:
www.vicforests.com.au
- The Australian National Sustainability Initiative:
www.sustainability.org.au
- The Victorian Association of Forest Industries Sustainability Reports:
www.vafi.org.au/reports/sustainability
- The Firewood Association of Australia:
www.firewood.asn.au
- Timber Communities Australia:
www.tca.org.au

VCE Geography Unit 3

Area of Study 2 – Use and Management of Local Resources

Curriculum Link

“On completion of this unit the students should be able to describe characteristics of a local resource and justify a policy for its future use and management.”

Key Knowledge

- The nature of the resource.
- The positive and negative impacts of resource use on people and their environment.
- The concept and practicality of sustainable policies related to the selected resource.

In the Classroom

Relevant Sections of the Forest Industries Explorer:

- The Victorian Forest
- Sustainable Harvesting
- Regeneration
- Dimensions of Sustainability

Activities:

1. Undertake a field study to a local forestry region, focusing on forests as a resource.
 - Prior to the field study: research existing management policies for the forest region.
 - During the field study: identify and map areas where management could be improved, including why it needs improving.
 - After the field study: present and justify a plan for the future management of this resource to ensure continued sustainable use in the future.

Resources:

- VicForests:
www.vicforests.com.au
- The Victorian Department of Sustainability and Environment:
www.dse.vic.gov.au
- The Forest and Wood Products Research and Development Corporation:
www.fwprdc.org.au
- The National Association of Forest Industries:
www.nafi.org.au

The Toolangi Forest Discovery Centre is an ideal destination for school field trips. The Discovery Centre has specifically tailored programs for students at all levels, including advice and assistance in planning forest units.

For more information about Toolangi Fieldwork email foresteducation.toolangi@dse.vic.gov.au or call (03) 5962 9318.

VCE Geography Unit 4

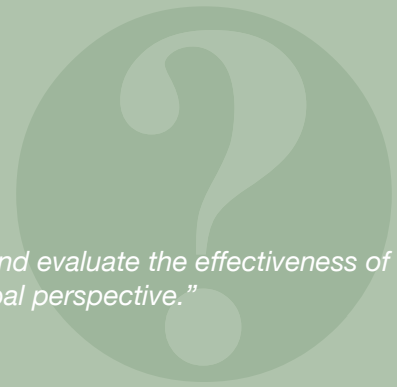
Area of Study 2 – Global Responses

Curriculum Link

“On completion of this unit the student should be able to compare and evaluate the effectiveness of responses and policies to manage a global phenomenon from a global perspective.”

Key Knowledge

- Positive and negative impacts of global phenomena on people and environments.
- Government and non-government responses to the human population and one other global phenomenon in the short and long term.



In the Classroom

Relevant Sections of the Forest Industries Explorer:

- Imports and Exports
- Governance

Activities:

1. Research a global phenomenon such as illegal logging and deforestation. What are the primary causes of these issues? Present your key findings to the class.
2. Create a matrix to compare the ways in which people and organisations (government and non-government organisations) respond to the impacts of illegal logging and deforestation.
3. Consider the social, historical, economic, environmental and political issues related to illegal logging. What could Australia do to address the problem and what would be the major constraints to achieving success?
4. Consider the positive and negative effects of the relationship between illegal logging and timber export revenue in some developing countries. Why do you think illegal logging exists in some countries?

Resources:

- VAFI Report – An Overview of Illegal Logging:
www.vafi.org.au/documents/illegallogging.pdf
- The Department of Agriculture, Fisheries and Forestry – Illegal Logging Report:
www.daff.gov.au/illegallLogging
- The UK Illegal Logging Info Group:
www.illegal-logging.info
- The National Association of Forest Industries:
www.nafi.com.au
- WWF Australia:
www.wwf.org.au

VCE Environmental Science Unit 1

Area of Study 2 – Environmental Change

Curriculum Link

“On completion of this unit the student should be able to analyse one human-induced environmental change and options for remediation.”

Key Knowledge

- Characteristics and distribution, causes and effects of human induced environmental changes.
- Human induced changes that contribute to the conservation and remediation of the environment.



In the Classroom

Relevant Sections of the Forest Industries Explorer:

- The Victorian Forest
- Regeneration
- Timber Processing
- Dimensions of Sustainability

Activities:

1. Visit a local sawmill that has an Environment Management System in place. Summarise the strategies and elements of the EMS system and investigate their effects.
2. Investigate how bushfire management has changed since the 1939 ‘Black Friday’ fires. What are the consequences of these changes?

Resources:

- The Federal Department of Environment and Water Resources:
www.environment.gov.au
- The Victorian Environmental Protection Authority:
www.epa.vic.gov.au
- The Victorian Department of Sustainability and Environment
www.dse.vic.gov.au
- The Victorian Association of Forest Industries - Bushfire Resources:
www.vafi.org.au/research-papers

Many Victorian sawmills offer field trips and guided tours of their operations for school groups.

VAFI can help you find a sawmill or production forest in your area, and can assist you in organising a school visit.

For more information, please call (03) 9611 9000 or email info@vafi.org.au

VCE Environmental Science Unit 2

Area of Study 2 – Using Environmental Indicators

Curriculum Link

“On completion of this unit the student should be able to investigate and report on a local example of environmental degradation or an environmental issue, using an appropriate monitoring program.”

Key Knowledge

- Characteristics, distribution, causes and effects of a selected local environmental issue.
- Suitable environmental indicators to monitor the state of the local environment.
- Role of government policies and regulatory bodies including state environmental protection policies and the Environment Protection Authority (EPA).

In the Classroom

Relevant Sections of the Forest Industries Explorer:

- The Victorian Forest
- Regeneration
- Dimensions of Sustainability

Activities:

1. Identify appropriate environmental indicators to monitor the state of the environment in a local forest region.
2. Investigate and compare two different forest management policies and the indicators they use. Present a summary of your findings to the class.
3. Using The Forest Industries Explorer and VAFI’s annual Sustainability Reports as resources, examine the use of environmental indicators in the practice of sustainability in production forestry.

Resources:

- The Victorian Association of Forest Industries Sustainability Reports: www.vafi.org.au/reports/sustainability
- The Victorian Department of Sustainability and Environment: www.dse.vic.gov.au
- VicForests: www.vicforests.com.au
- The National Association of Forest Industries: www.nafi.com.au

VAFI’s annual Sustainability Reports for 2005 and 2006 are available online at:

www.vafi.org.au/reports/sustainability

For printed copies of the reports, please email info@vafi.org.au or call (03) 9611 9000 and we will gladly send you a free class set.

VCE Environmental Science Unit 3

Area of Study 1 – Energy and Global Warming

Curriculum Link

“On completion of this unit the student should be able to recognise the principles of energy and relate them to the contribution of one fossil and one non-fossil energy source to the enhanced greenhouse effect.”

Key Knowledge

- Definition of scientific concepts and principles of energy, including conservation of energy, energy efficiency of conversions, and ways of increasing energy efficiency.
- Knowledge of one fossil fuel energy resource and one non-fossil fuel energy resource.
- Impacts of the increased greenhouse effect.
- Options for reducing the enhanced greenhouse effect including the Kyoto Protocol.

In the Classroom

Relevant Sections of the Forest Industries Explorer:

- Dimensions of Sustainability
- Case Studies

Activities:

1. Identify two types of energy sources, one fossil and the other a non-fossil source such as biomass from forests. Compare their effects on the environment during the development and use of the energy. Write a letter to the editor of a newspaper to draw attention to your conclusions.
2. Investigate government initiatives in the reduction of greenhouse gas emissions. Compare and contrast two different initiatives, such as emissions trading, the national greenhouse gas inventory or regional forest agreements.
3. Using The Forest Industries Explorer and the Internet, examine and describe the role of forest industries in two different greenhouse initiatives, such as emissions trading and carbon sink projects.

Resources:

- Australia’s National Greenhouse Accounts:
www.greenhouse.gov.au/inventory
- Regional Forestry Agreements Homepage:
www.rfa.gov.au
- Australian Government Emissions Trading Analysis:
www.greenhouse.gov.au/emissionstrading
- Firewood Association of Australia:
www.firewood.asn.au

VCE Environmental Science Unit 4

Area of Study 2 – Applied Environmental Science

Curriculum Link

“On completion of this unit the student should be able to use the principles of ecologically sustainable development and environmental management to evaluate a selected environmental science project.”

Key Knowledge

- Assessment of the environmental impacts and risks associated with one environmental science project.
- Influences and consequences of regulatory frameworks related to the activities of the project.
- Role of the community, media, environmental interest groups and non-government/government agencies in encouraging responsible environmental practices.
- Environment management: tools and strategies, EMS, LCA, environmental impact assessment, environmental risk assessment.

In the Classroom

Relevant Sections of the Forest Industries Explorer:

- Victorian Production Forests
- Sustainable Harvesting
- Native Timber Industry Stakeholders

Activities:

1. Using Victorian sawmills as a case study, analyse the environmental risks and impacts of sawmill operations, consider how to reduce these risks and impacts, and evaluate the effectiveness of current strategies.
2. Identify how Life Cycle Analysis can help organisations with waste management and sustainability.
3. In small groups, discuss the influence of local communities, media, government agencies and lobby groups on the operation of forestry operations in Victoria. Conduct a class debate.

Resources:

- The Australian Life Cycle Assessment Society:
www.alcas.asn.au
- RMIT Life Cycle Assessment Program:
www.cfd.rmit.edu.au/programs/life_cycle_assessment
- VicForests:
www.vicforests.com.au
- The Victorian Environmental Protection Authority:
www.epa.vic.gov.au

VCE Design and Technology Units 1-4

Wood as a Resource

Curriculum Link

“With increased focus on environmental, economical and social viability, the impacts of products throughout their life cycle can be analysed and evaluated. Comparisons with similar products help to judge the success of a product in relation to a range of design factors and fundamentals.”

Key Knowledge

- Unit 1: origins, sources and classifications of material.
- Unit 2: factors that determine choice of suitable materials.
- Unit 3: material requirements, including characteristics and properties.
- Unit 4: environmental and social issues associated with products.

In the Classroom

Relevant Sections of the Forest Industries Explorer:

- Imports & Exports
- Markets & Applications
- Case Studies
- Dimensions of Sustainability

Activities:

1. Wood is often said to be an environmentally friendly material. Using The Forest Industries Explorer, list some of the justifications for this statement.
2. Compare two similar products made from different types of wood. Describe how the choice of material has influenced the design and function of the product.
3. Test different types of wood for specific properties. Write a materials testing report, making recommendations on the suitability of materials for specific applications.
4. Using The Forest Industries Explorer and the internet, analyse two similar products, one made from wood and one made from another material. Analyse the social and environmental impacts of the products. Consider factors relating to the sourcing and processing of materials as well as the social and human impact of the manufacturing of the product. Design an advertisement that illustrates your findings.

Resources:

- Wood Products Victoria:
www.wpv.org.au
- The Federal Government’s Timber Industry Website:
www.timber.org.au
- The Institute of Foresters Australia:
www.forestry.org.au
- The Australian Greenhouse Office:
www.greenhouse.gov.au



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