

# Forest Secrets

For Early and Middle Years



## Teacher Resource Package

### Acknowledgements

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## Introduction

This education package provides a set of activities and background information to support a school excursion for Years Prep-9 to the Forest Gallery at Melbourne Museum.

In this gallery, students will find a living interpretation of Victoria's tall temperate forests. The gallery, which is outdoors, houses almost 8000 trees and plants and around 20 different vertebrate species, including snakes, birds, fish and frogs. The gallery also contains the *Forest Secrets* exhibition, which is divided into zones that represent specific agents of change within the forest – Water, Earth Processes, Climate, Fire and Human Intervention.

### Contents of this teacher resource package

- Pre- and post-visit activities that stimulate students' curiosity about their museum visit, assist students to interpret what they will experience, and extend their understanding after the excursion
- Forest Walks to help students explore the exhibition at the museum
- Resources for teachers and students, including websites and references related to Australia's forests.

Additional information for school groups visiting Melbourne Museum is available at <http://museumvictoria.com.au/education>

Information about the *Forest Secrets* exhibition is available at <http://museumvictoria.com.au/forest-secrets>

### Please note

*Forest Secrets* is a long term exhibition at Melbourne Museum. The museum is open from 10am to 5pm each day.

Bookings are essential for all groups.

Bookings: 1300 130 152





### Free entry

Subscribe to MVteachers – the only way to get free teacher entry to Melbourne Museum.








Join at: <http://museumvictoria.com.au/Education/MVteachers/>

## Victorian curriculum links








### VELS Links Level 3.0

	Domain	Dimension & Standard
Discipline-based Learning	 Science	<ul style="list-style-type: none"> <li>• identify and describe the structural features of living things, including plants and animals</li> <li>• identify how these features operate together to form systems which support living things to survive in their environments</li> <li>• describe natural physical and biological conditions, and human influences in the environment, which affect the survival of living things</li> <li>• explain how features of the landscape are altered by processes of weathering and erosion</li> </ul>
	 Geography	<ul style="list-style-type: none"> <li>• describe the human and physical characteristics of their local area and other parts of Victoria</li> <li>• describe how people use and affect different environments in Victoria</li> </ul>
Physical, Personal & Social Learning	 Civics and Citizenship	<ul style="list-style-type: none"> <li>• explain why protection and care for the natural and built environment is important</li> <li>• participate in activities to protect and care for the natural environment</li> </ul>
	 Interpersonal Development	<ul style="list-style-type: none"> <li>• cooperate with others in teams for agreed purposes, taking roles and following guidelines established within the task</li> </ul>








## VELS Links Level 4.0

Domain		Dimension & Standard
Discipline-based Learning	 Science	<ul style="list-style-type: none"> <li>• explain change in terms of cause and effect</li> <li>• identify and explain the relationships that exist within and between food chains in the environment</li> <li>• analyse a range of science-related local issues and describe the relevance of science to your own and other people's lives</li> <li>• explain how sustainable practices have been developed and/or are applied in your local environment</li> <li>• practise framing and investigating questions that interest you and are drawn from locally based issues</li> </ul>
	 Geography	<ul style="list-style-type: none"> <li>• describe the reaction of people to natural processes including the management of natural disasters</li> <li>• compare the various ways humans have used and affected the Australian environment</li> <li>• recommend ways of protecting environmentally sensitive areas in a sustainable way</li> </ul>
	 The Arts	<ul style="list-style-type: none"> <li>• create and present performing and visual arts works that show emerging arts knowledge and an ability to plan arts works that communicate ideas, concepts, observations feelings and/or experiences</li> </ul>
Interdisciplinary Learning	 ICT	<ul style="list-style-type: none"> <li>• use ICT tools and techniques that support the organisation and analysis of concepts, issues and ideas and that allow relationships to be identified and inferences drawn from them</li> <li>• use email, websites and frequently asked question facilities to acquire information from peers and known and unknown experts</li> </ul>
	 Thinking Processes	<ul style="list-style-type: none"> <li>• distinguish between fact and opinion</li> <li>• use the information you collect to inform decision making</li> </ul>
Physical, Personal & Social Learning	 Civics and Citizenship	<ul style="list-style-type: none"> <li>• present a point of view on a significant current issue and include recommendations about the actions that individuals and governments can take to resolve this issue</li> <li>• demonstrate understanding that there are different viewpoints on an issue</li> </ul>
	 Interpersonal Development	<ul style="list-style-type: none"> <li>• work effectively in different teams and take on a variety of roles to complete tasks of varying length and complexity</li> </ul>




## VELS Links Level 5.0

Domain		Dimension & Standard
Discipline-based Learning	 Science	<ul style="list-style-type: none"> <li>• explain the relationships, past and present, in living and non-living systems, in particular ecosystems, and human impact on these systems</li> <li>• analyse what is needed for living things to survive, thrive or adapt, now and in the future</li> <li>• explain how the observed characteristics of living things are used to establish a classification system</li> <li>• use simulations to predict the effect of changes in an ecosystem</li> <li>• identify, analyse and ask their own questions in relation to scientific ideas or issues of interest</li> </ul>
	 Geography	<ul style="list-style-type: none"> <li>• explain, using examples, how the interaction of physical processes and human activities create variations within the regions</li> <li>• describe differences in attitudes to environmental issues</li> <li>• demonstrate understanding of environmental issues based on inquiry and propose ways of ensuring the sustainability of resources</li> </ul>
	 The Arts	<ul style="list-style-type: none"> <li>• create and present performing and visual arts works that show emerging arts knowledge and an ability to plan arts works that communicate ideas, concepts, observations feelings and/or experiences</li> </ul>
Interdisciplinary Learning	 ICT	<ul style="list-style-type: none"> <li>• use a range of data types, including sound and still and moving images, to record the decisions made and actions taken when developing new understanding and problem solving</li> <li>• judge the integrity of the located information based on its credibility, accuracy, reliability and comprehensiveness</li> <li>• share ideas through a blog, website or other public forums</li> </ul>
	 Thinking Processes	<ul style="list-style-type: none"> <li>• use a range of appropriate strategies of reasoning and analysis to evaluate evidence and consider their own and others' points of view</li> </ul>
Physical, Personal & Social Learning	 Civics and Citizenship	<ul style="list-style-type: none"> <li>• present points of view on contemporary issues and events using appropriate supporting evidence</li> <li>• explain the different perspectives on some contemporary issues and propose possible solutions to problems</li> <li>• participate in activities to contribute to environmental sustainability</li> </ul>
	 Interpersonal Development	<ul style="list-style-type: none"> <li>• support others to share information, explore the ideas of others, and work cooperatively</li> </ul>

## VELS Links Level 6.0

Domain      Dimension & Standard		
Discipline-based Learning	 Science	<ul style="list-style-type: none"> <li>• explain how the coordination and regulatory functions within plants and animals assist them to survive in their environments</li> <li>• apply concepts of geological time to elaborate explanations of both natural selection and evolution</li> <li>• describe the science base of science-related occupations in their local community</li> </ul>
	 Geography	<ul style="list-style-type: none"> <li>• explain the operation of a major natural system and its interaction with human activities</li> <li>• evaluate the consequences of the interaction between humans and the environment and develop a policy to address an issue related to it</li> <li>• formulate and evaluate comprehensive policies, including those for sustainable use and management of resources</li> </ul>
	 The Arts	<ul style="list-style-type: none"> <li>• represent observations and communicate their interpretations by effectively combining and manipulating selected arts elements, principles and/or conventions</li> </ul>
Interdisciplinary Learning	 ICT	<ul style="list-style-type: none"> <li>• use a range of ICT tools and data types to visualise thinking strategies when solving problems and developing new understanding</li> <li>• exchange ideas and considered opinions with others through online forums and websites</li> <li>• communicate regularly online with peers, experts, and others, expressing their messages in language appropriate to the selected form of communication</li> </ul>
	 Thinking Processes	<ul style="list-style-type: none"> <li>• make informed decisions based on analysis of various perspectives and, sometimes contradictory, information</li> </ul>
Physical, Personal & Social Learning	 Civics and Citizenship	<ul style="list-style-type: none"> <li>• take a global perspective when analysing an issue, and describe the role of global organisations in responding to international issues</li> <li>• draw on a range of resources, including the mass media to articulate and defend their own opinions about political, social and environmental issues in national and global contexts</li> <li>• develop an action plan which demonstrates their knowledge of a social or environmental issue and suggest strategies to raise community awareness of it</li> </ul>
	 Interpersonal Development	<ul style="list-style-type: none"> <li>• work collaboratively, negotiate roles and delegate tasks to complete complex tasks in teams</li> </ul>

## VCE Links

Study	Outcomes
 Biology	<ul style="list-style-type: none"> <li>• investigate the rich diversity of Australian ecosystems and the relationship between living things and their environment</li> <li>• investigate structural and physiological adaptations of organisms to particular ecological niches</li> <li>• Investigate how behavioural and reproductive adaptations are used to study individual and group behaviour of animals</li> <li>• techniques used to monitor environmental change and maintain ecosystems are investigated</li> <li>• explain and analyse the relationship between environmental factors, and adaptations and distribution of living things</li> <li>• design, conduct and report on a field investigation related to the interactions between living things and their environment, and explain how ecosystems change over time</li> </ul>
 Environmental Science	<ul style="list-style-type: none"> <li>• function of ecosystems and the interactions in and between the ecological components are investigated</li> <li>• consider the effects of natural and human-induced changes in ecosystems</li> <li>• analyse one human-induced environmental change and options for remediation</li> <li>• explain the nature of environmental indicators for pollution and ecological health of ecosystems</li> <li>• to investigate and report on a local example of environmental degradation or environmental issue, using an appropriate monitoring program</li> <li>• describe the characteristics of biodiversity, and evaluate strategies to reduce the effects of threatening processes on one selected endangered animal</li> <li>• explain how scientific data is applied to the assessment of environmental risk in ensuring biodiversity</li> </ul>
 Outdoor and Environmental studies	<ul style="list-style-type: none"> <li>• analyse ways in which individuals experience, understand and respond to natural environments, with reference to related outdoor experiences</li> <li>• evaluate human impacts on natural environments and analyse procedures for minimising and managing these impacts, with reference to related outdoor experiences.</li> <li>• describe and analyse how particular interactions and relationships with, and perceptions of, the Australian environment have changed over time</li> <li>• describe the contemporary state of the environment and evaluate the importance of healthy natural environments for individuals and society</li> <li>• evaluate practices and strategies for sustainable interactions between humans and the environment</li> </ul>



## How to make the most of learning in museums

Research suggests that school students will learn more in a museum if:

- Pre-visit preparation takes place, for example pre-visit lessons, orientations and assessment of students' prior knowledge.
- Planning and preparation of concepts to be investigated with students takes place.
- Curiosity is encouraged and some student choice and control over their learning experiences is taken into account.
- The experience is learner-centred.
- Teachers are familiar with the museum site. Museum Victoria offers free entry for teachers to all our museums and curriculum related professional development sessions via the MVteachers subscription service:  
<http://museumvictoria.com.au/education/mvteachers/>
- Co-operative small groups are used. Where possible, an adult should accompany each group.
- The social aspects of learning are taken into account. Teachers should encourage students to talk and share ideas about what they are seeing/hearing/touching; they should be asking lots of questions.
- The visit to the museum is integrated into a broader body of student learning at the school level and is strongly linked to the curriculum. Follow-up and reflective sessions are essential.
- Both physical and mental rests are available during the visit.
- Students share their findings in some sort of report or presentation.

## Planning your visit to *Forest Secrets*

The following specific guidelines will help to ensure that your excursion to *Forest Secrets* is successful!

Book well in advance (phone Melbourne Museum: freecall 1300 130 152), and check all details when you receive your booking confirmation form.

Plan your excursion as part of a unit of work on forests, Australian environments or ecology. Both the Early Years (P-4) and Middle Years (5-9) sections provide ideas for pre- and post-visit activities.

The *Forest Secrets* exhibition is located in an external gallery and is therefore exposed to Melbourne's weather. Please advise students to wear clothing suitable for the time of year that they visit. Hats and sunscreen for summer and jumpers and water-proof jackets for winter are recommended.

It is strongly suggested that your students include structured activities in their visit to *Forest Secrets*. To facilitate this, a number of Forest Walks are provided in both the Early Years (P-4) and Middle Years (5-9) sections.

Choose a Forest Walk that is appropriate for the levels and interests of your students and photocopy them for students to use during their visit. Discuss the Forest Walks and floorplan with your students before the excursion.

In order to avoid congestion, students should work in small groups of no more than 4-5. One or two groups should start working in each zone and then move on to the next zone using the following sequence:

**Water → Earth → Climate → Fire → Human → Water (and so on).**

It is anticipated that students will not complete all sections of the Forest Walks. However, each section should be completed by at least one or two groups. This will allow groups to share data and obtain an overview when they are back at school.

Melbourne Museum Discovery Centre is located on the lower ground level of the museum. This area contains a broad range of reference material, computer terminals with Internet access, a pressed plant collection and other Forest Gallery specimens. Students are welcome, but must be in small groups.

<http://museumvictoria.com.au/discoverycentre/>

## Websites

### **Forest Secrets**

<http://museumvictoria.com.au/forest/>

This website presents a range of information and images about the *Forest Secrets* exhibition and Victoria's tall forests.

### **Geoscience Australia**

<http://www.ga.gov.au/education/index.jsp>

The Geoscience Australia Education Centre includes information and activities on plate tectonics and geology for students.

### **Bioinformatics (Museum Victoria)**

<http://museumvictoria.com.au/bioinformatics/>

Museum Victoria's scientists have been observing, recording and collecting butterflies, lizards, snakes, frogs and mammals throughout Victoria.

### **Bureau of Meteorology**

<http://www.bom.gov.au/>

This site includes statistics and maps on temperature, rainfall and climatic conditions across Victoria and Australia.

### **Country Fire Authority**

<http://www.cfa.vic.gov.au/>

Advice on fire safety practices for the home and school.

### **Department of Sustainability and Environment – Fire & Other Emergencies**

<http://www.dse.vic.gov.au/fires/>

This site includes information and statistics on Victoria's bushfire history and an overview of fire management techniques in Victoria.

### **Department of Sustainability and Environment's Forest Service**

<http://www.dse.vic.gov.au/forests/>

Information on the management of Victoria's forests including education materials and fieldwork programs at Toolangi State Forest.

## **The Kulin Nation**

[http://www.yarrahealing.catholic.edu.au/kulin-nation/index\\_wide.cfm?loadref=32](http://www.yarrahealing.catholic.edu.au/kulin-nation/index_wide.cfm?loadref=32)

At the time of European invasion, a large part of central southern Victoria was owned by a loose confederation of five Aboriginal groups who identified themselves as the 'Kulin' nation.

## **Melbourne Water**

[www.education.melbournewater.com.au](http://www.education.melbournewater.com.au)

Want to know more about Melbourne Water's Schools Education programs? Includes information on water supply, stormwater, and rivers and creeks.

## **National Association of Forest Industries**

<http://www.nafi.com.au/>

The National Association of Forest Industries' (NAFI) website includes resource sheets on topics such as plantations, old growth forests, bushfires and rainforests. There is a section for teachers and students, which includes the Timber Trek Club.

## **Victorian Frog Group**

<http://frogs.org.au/>

Need to find information on Victoria's frogs? Then this is the site for you!

## **Viridans Biological Databases**

<http://www.viridans.com>

Flora and fauna images and DVDs for field naturalists, ecologists, teachers and students.

## **The Wilderness Society**

<http://www.wilderness.org.au/>

Find out about the latest campaigns, events and resources on the conservation of forests.

## **Yarra Valley Water**

<http://www.yvw.com.au/>

This site provides information for teachers and activities for students.

## **Zoological Parks and Gardens Board**

<http://www.zoo.org.au/>

Find out about many Australian animals and the education programs offered at Melbourne Zoo, Healesville Sanctuary and Werribee Open Range Zoo.

## Excursion Sites

The following organisations provide forest based fieldwork programs which would complement a visit to the Forest Gallery.

### Department of Sustainability and Environment

<http://www.dse.vic.gov.au>

Contact your local office for information on excursion sites and availability of material.

### Parks Victoria

<http://www.parkweb.vic.gov.au>

The following locations have programs and materials developed for school groups:

Dandenong Ranges National Park: Telephone 03 9758 1342 or 03 9752 3909

Grampians (Gariwerd) National Park: Telephone 03 5356 4381

Wilson Promontory National Park: Telephone 1800 350 552

Other sites that could be visited include: Donna Buang Rainforest Gallery Skywalk (Yarra Ranges National Park), Tarra-Bulga National Park, You Yangs National Park.

To find out more information contact Parks Victoria on 13 1963 or email

[info@parks.vic.gov.au](mailto:info@parks.vic.gov.au)

### Toolangi Forest Education Service

Offers a range of forest based fieldwork programs for both primary and secondary students.

Telephone 03 5962 9318 Facsimile 5962 9022