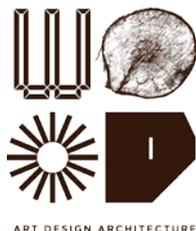




WOOD: Art Design Architecture

Exhibition Education Pack



Jam
Factory

Botanic Gardens
of ADELAIDE

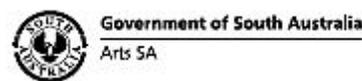


Principal sponsor



Government Support

The exhibition has been supported by the Contemporary Touring Initiative through Visions of Australia, an Australian Government program; and the Visual Arts and Crafts Strategy, an initiative of the Australian, State and Territory Governments. JamFactory acknowledges the support of the South Australian Government through Arts SA and the assistance of the Visual Arts and Crafts Strategy, an initiative of the Australian, State and Territory Governments. JamFactory's Exhibitions Program is assisted by the Australian Government through the Australia Council, its arts funding and advisory body. The Botanic Gardens of Adelaide are governed by the Department of Environment, Water and Natural Resources and the Board of the Botanic Gardens and State Herbarium.



Supporting sponsors



The Museum of Economic Botany and its Exhibition program are proudly sponsored by Santos



ANZ is the principal sponsor of JamFactory's 40th anniversary

Design sponsor



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Education Pack Development: Stephen Meredith



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Section 2

Teacher Exhibition Guide

An edited guide to the exhibition for teachers and older students. Content includes artist's background information, interpretive signage text and photos of each piece in the exhibition.

Section 3

Student Exhibition Activities

A series of activities for students that will assist them to interact with and learn from the works on display.

Introduction

About The Exhibition

WOOD:art design architecture explores innovative and outstanding uses of wood in contemporary Australian art, design and architecture.

The exhibition showcases unique works by contemporary Australian artists, designers and architects engaging with the material qualities of wood. It represents a cross-section of current creative practices, modes of thinking and relationships to this fundamental material. Art, design and architecture are rarely brought together in a single exhibition, but doing so allows a broader exploration of our connection to wood and how we engage with it in our everyday lives.

A total of 28 exhibitors have contributed to the exhibition providing rich, diverse and inspiring examples of the use of wood in the creative arts, design and architecture.

The exhibition is a result of collaboration between two iconic South Australian organisations, JamFactory and the Botanic Gardens of Adelaide. While in Adelaide the exhibition will be split between two venues: the Santos Museum of Economic Botany in the Adelaide Botanic Garden and JamFactory.

Catalogue

A high quality, comprehensive catalogue accompanies the exhibition. It provides stunning images of each piece with accompanying biographies of the contributors and insightful interpretation and explanation of the various works and architectural projects. A number of essays by a variety of authors provide differing perspectives of wood in a variety of contexts.

The catalogue will greatly assist teachers who are looking to thoroughly familiarize themselves with the content and rationale behind the exhibition and the pieces on display prior to bringing their class to view the works. It is also a valuable resource for school art departments both as a teacher /student reference and for use by senior students looking at exhibition design and delivery.

The catalogue is available at the exhibition for a cost of \$25.



Why teach about WOOD?

Different uses of wood have permeated the lives of people throughout history. Access to wood and its availability has, at times, determined the rise and fall of civilizations. People have built structures and created objects of ingenious design, beauty and symbolism from wood that have made our lives more comfortable, safe and pleasurable.

In the classroom, the topic of wood provides opportunities for a project based approach that integrates the learning areas of the arts, design, technology and environment. Wood is everywhere in our everyday lives enabling teachers to build on students own prior knowledge and experiences with the material. The ready availability and workability of wood enables students to learn through practical activities and hands on experience and in doing so facilitates student motivation and interest.

Themes for learning

Trees and Wood

Trees provide us with not only one of the practical necessities of life but when trees are making wood they are also giving us oxygen, cleaner water, climate regulation, erosion control, homes for wildlife and much more. Most importantly they are one of the world's largest carbon stores, making them an essential tool in helping to reduce global warming.

The study of trees and forests takes in many areas of the life science curriculum. Going inside a tree to explore how wood is made is a fascinating journey that will surprise students and provide them with a deeper appreciation just how 'alive' these seemingly motionless living things are. The topic also provides opportunities to explore biological topics that include plant photosynthesis, classification, plant/animal interactions, growth and decay, forests – natural and managed and life cycles.

Wood in Art Design and Technology

Despite its utility and ready availability, wood is actually a difficult material to work with. It can expand and contract. It can warp, splinter and crack. Those who understand its ways, and work with it skillfully, have always been revered. The evolution of tools and technologies for working with wood reflect the history of craftsmanship and the nature of human ingenuity – from sharpened stone implement to computer-controlled milling machines. As a material, wood provides opportunities for students to explore the challenges of using it in art and design situations while achieving aesthetic objectives.

Wood and Sustainability

Wood and timber is one of the world's most sustainable and environmentally important materials used by people. Compared with some other building materials timber often requires less energy to harvest, transport and manufacture. It is also renewable and recyclable and has a role to play in carbon storage. Sourcing timber from sustainably grown plantations and forests is an ongoing challenge for the timber industry worldwide and provides students with an opportunity to look at all sides of the forest debate locally and globally.

Technology - Future Wood

New engineered wood products are being developed that will make it quicker and easier to use wood compared to concrete and steel. Wood also has the potential to replace more than building materials. Wood fibre can produce a wide range of composite and reconstituted plastic-like materials or be a source of clean, renewable energy.

Recently, a cellulose composite was created for use in 3-D printers, while a new wood-based material called nano crystalline cellulose is reported to have strength properties greater than Kevlar. As one of our few truly renewable materials, sustainably sourced wood will be playing a much greater role in maintaining and improving our quality of life.

Wood and Empires

Wood and timber have been one of the world's most valuable resources. Wars and invasions have occurred throughout history to secure land and amongst other things forests and their much needed supply of timber. The ancient Egyptians built ships from the acquired forests of Syria while the British used Indian teak for sleepers to develop the expansive Indian railway system and expand trade. Timber and its history as an economic resource provides insights into how modern nations look to secure their boundaries and resources when faced with the uncertainties like climate change, predicted rising sea levels and energy supply.

Sources of information:

Exhibition catalogue WOOD: Art Design Architecture
<http://www.naturallybetter.com.au/home.html>

Connecting to your curriculum

The exhibition has very strong connections to a number of learning areas and cross curriculum perspectives in the Australian Curriculum. A detailed matrix of the Australian Curriculum connections can be found on pages 21-25.

This education package is designed primarily for students in years 4 to 10, with some senior secondary activities included in the exhibition activity section. The open ended nature of some of the exhibition and classroom activities also allow material to be adapted for younger students.

Australian Curriculum

Cross Curriculum Priorities

Sustainability Priority

Wood and its production and use involve significant environmental and sustainability issues.

Key concepts:

- the interdependent and dynamic nature of systems that support all life on earth
- building the capacities for thinking and acting in ways that are necessary to maintain a more sustainable future.

Aboriginal and Torres Strait Islander histories and cultures

Aboriginal works in the exhibition provide an opportunity for students to explore the significant role of wood in Aboriginal art, technology and everyday life and in doing so appreciate the culture's deep knowledge and understanding of their environment and the natural materials found in it.

Learning Areas

The Arts Foundation to Year 10, Draft July 2012

Many student activities in this pack relate directly to middle years Strands of Making and Responding.

English

The exhibition activities section will engage students in: developing knowledge, understanding and skills in listening, reading, viewing, speaking and writing. The activities in this pack will also encourage the development and expression of ideas.



Source: The carbon cycle of timber and wood-based products
(Source: CEI-Bios, European Panel Federation)

Science Foundation to Year10

The post visit activities that explore the properties of wood relate directly to the Science Understanding and Science Inquiry Skills Strands.

Design and Technologies

The exhibition and activities provide an opportunity for students in Design and Technologies to develop skills in design, production, and evaluation.

For example:

- integrating learning from other learning areas (for example, 'Living things' from Science)
- focusing on specific materials timber
- focusing on a product
- focusing on an area of specialisation such as architecture

From the Shape of the Australian Curriculum 2012

History

The exploitation of forests and the ever expanding need for timber throughout history provides insights and connections to historical periods, imperialism and causes of conflict sections of the History Learning Area of the Australian curriculum.

Geography

Many connections can be made to the draft Geography curriculum that enhance and provide examples for investigations within the Sustainability Major Concept.

Getting started

Activities

One way of introducing the topic of wood is to draw on students' prior knowledge, experiences, memories and observations of this material. The following activities provide useful starting points for this approach.

Wood association game

Aim:

To encourage students to think about the many different ways wood is used.

Activity:

1. Students write down their first response to the teacher calling out word pairs that start with the word "wood". Some examples include –wood-kitchen, wood-transport, wood-building, wood-sport, wood-environment, wood-art, wood-drink, wood-medicine, wood-farming, wood-wrapping presents, wood-sleeping, wood-books and wood- water.
2. After a few times stop, scribe student responses and discuss results.
3. Allow students to provide their own wood word pairs for other class members to respond to.

Follow up:

- Share ideas on the variety of ways wood can impact on our lives.
- Have students image a world without wood and how it might be different.
- Discuss how long (sustainable) a woodless world might last compared to one which produces wood.

Wood in your world

Aim:

Make students aware of the different uses and value of wood in their lives

Activity

1. Ask students to find a small interesting object that is made or partly made of wood in their home and either photograph it or bring it to school.
2. Have students present their object to rest of the class and talk about why wood was used to make the object and what wood's advantages are over other possible materials that it could have been made from.
3. Ask students to create some interesting text about the object and why they chose it in particular. Create a mini exhibition of the student's objects and statements, invite other classes to view.



Follow up:

- Have students think about uses of wood that surprised them.
- Ask students to think about ways we can group uses under different headings.
- Talk about how some of the objects would have been made and the features of the different woods used.
- Share ideas on the design of the object and if wood was the best choice of material.
- Encourage students to find interesting and unusual images of different functional and aesthetic uses of wood. Make a wall collage from the images.
- Wood Audit – as a homework activity ask students to complete a wood audit of their home to find out where wood is used as a part of the building and the objects it contains. Pool the class information, display results visually, encourage analysis and conclusions about the different uses of wood where you live.

Mind mapping

Aim:

Encourage students to think laterally about the different connections there are to wood, the environment and our lives.

Activity

1. There are many resources available on the web that explain the mind map process or provide software for doing it online. See mind map guidelines at http://en.wikipedia.org/wiki/Mind_map
2. Provide students with a large sheet of landscape orientated paper, coloured pencils or marker pens.
3. Explain the process of making a mind map as a creative way of developing interconnected ideas around a central theme of wood.
4. Ask students to write the word wood or place a picture or drawing symbolising wood in the centre of the page. Ask students to then think of new and related ideas on the subject and draw them as different coloured branches originating from the centre of the page. Keep branching from main branches as more ideas come in.
5. Use lines, colours, arrows, branches or some other way of showing connections between the ideas generated on the mind map.



Follow Up

- Compare mind maps and the discuss diversity of responses.

Words in wood

Use some of the quotes listed here to encourage student thinking about the many ways wood is a part of our lives.

Encourage students to research other relevant quotes then write one of their own. Share with the rest of the class and make a wall pin up display.

Quotes

Chop your own wood, and it will warm you twice.

Henry Ford

Rotten Wood cannot be carved.

Chinese proverb

'A society grows great when old men plant trees whose shade they know they shall never sit in.'

Greek Proverb

We know wood deeply, as we know stone, but wood is softer, warmer and veined with sap, so more like ourselves. As a sculptor, wood is such a rich material as it carries its own memory of tree, time, oxygen and weather, as well as being so mutable as to allow us to cast our own thoughts and memories upon it.

Lionel Bawden WOOD Exhibitor

I can look at the knot in a piece of wood until it frightens me.

William Blake

Only when the last tree has died and the last river been poisoned and the last fish been caught will we realise we cannot eat money.

Cree Proverb

The best time to plant a tree was 20 years ago. The next best time is now.

Chinese Proverb

Except during the nine months before he draws his first breath, no man manages his affairs as well as a tree does.

George Bernard Shaw, Maxims for Revolutionists, 1903

Rest is not idleness, and to lie sometimes on the grass under trees on a summer's day, listening to the murmur of the water, or watching the clouds float across the sky, is by no means a waste of time.

J. Lubbock

At school activities

The activities listed here require minimal tools and equipment. At all times when students are handling or working with wood or any other material or equipment ensure the appropriate health and safety protocols and safeguards in place.

Please modify as appropriate for your year level.

1. Working with wood

Aim:

To challenge students to design and build a small object of choice using a variety of everyday wooden materials.

Activity:

1. Provide students with wood glue and everyday wooden objects like pegs, matches (without heads), ice-cream sticks and toothpicks. These materials may also be brought from home.
2. Encourage students to design and make a small wooden object of their choice. It may be an artistic or practical piece.
3. Visit <http://www.biglearning.org/craft-sticks/> for tips on students working with wood including cutting, bending, glueing, painting and jointing.



Follow Up:

- Ask students to keep a designer's log of their process from the initial idea, design work to the finished project.
- Review the advantages and disadvantages of working with wood.
- Create a classroom mini-exhibition with designer's statement written by students next to their finished piece.

2. Seeing the forest for the trees

Aim:

To help students become familiar with the wood producing trees of Australia and the world and their importance to our environment.

Activity:

1. Take students to your local botanic garden or arboretum to observe some of the more interesting and spectacular forest trees of Australia and the world.

Contact the education officer at the site beforehand to organize visit trails and activities.

2. For South Australian students, the Adelaide Botanic Garden has a Talking Tree Trail, Australian Plant Trail and Year of the Forest Trail available for download from <http://www.botanic.sa.edu.au/>. Other Australian botanic gardens have similar learning opportunities

NOTE: If you are visiting the Wood exhibition in the Santos Museum of Economic Botany in the Adelaide Botanic Garden point out to students the unique timbers of the world display while in the museum.



Follow Up:

- Encourage students to research a particular timber tree they encounter on their excursion. Apart from properties of the timber encourage exploration into all aspects of the tree including any historical, cultural, indigenous and economic uses of the tree or wood. Students should also consider environmental and sustainability issues surrounding timber production from their chosen tree. Students present their research to the rest of the class.
- Have students perform a tree audit and tree vegetation map of areas like the school yard, home garden or a local park. Plant ID assistance may be obtained from local experts, like local plant nursery staff or Society for Growing Australian Plants in all states. Encourage students to make dried herbarium specimen of a particular tree of interest.
- Set up class debates on sustainability issues, climate change and the environment as they relate to Australian and worldwide timber sourcing, production and use.

Useful websites

http://www.ecokids.ca/pub/eco_info/topics/forests/what_is_a_forest.cfm

<http://www.timber.net.au/index.php/environmental-design-carbon-footprint.html>

3. Old wood is new again

Aim:

To investigate the different ways old wood can be renewed or recycled.

Activity:

1. Supply or request students bring pieces of old weathered wood to school.
2. Leave part of the surface weathered. Sandpaper the rest of the surface to a fine finish starting with coarse and finishing with fine sandpaper.
3. Use a variety of finishes on half of the sanded surface. Examples of finishes might include beeswax, polyurethane and linseed oil. Please note appropriate safe use guidelines with each product.
4. Compare the look and feel of all surfaces.



Follow Up:

- Discuss different ways wood can be renewed and finished.
- Have students prepare and present a report on the economic and environmental issues around the recycling and rejuvenating of old timber for reuse.

3. Balsa models

Aim:

To design and construct a balsa wood architectural model or object.

Activity:

For older students:

1. Encourage students to research energy efficient building design, water conservation and recycled building products as a part of designing a building.
2. In partnership with the maths teacher introduce students to the topic of scale when designing plans.
3. Obtain sheets of balsa wood from a local craft shop. (Balsa wood is a cheap, soft, highly workable, ultra light wood that is ideal for making models and other objects.)
4. Ask students to design a simple, small scale architectural model of a building or object of their choice and make it using balsa wood



For younger students:

Set a simple task of creating a one dimensional shape from balsa wood OR make a wood-themed simple hanging mobile from balsa wood shapes, fishing line and wooden dowels.

Follow Up

- Have students present their models with a written report of the reasons for their design and the challenges of making models.
- Find out about the Balsa tree and its unique wood and why its properties are so useful for model making.
- Discuss the value of models when designing any made object.
- Research digital model making and discuss strengths and weaknesses compare to built real life models.
- For younger student mobile making activity, display student mobiles and share the reasons for different balsa wood shapes.



4. Wood composites

Aim:

To make students aware of wood composites and their features.

Activities:

1. Different timber based composite materials can be made using thin layered sheets of wood or compressed or glued particles of wood. These are known as wood composites, examples include:
Plywood – made from thin layers of wood.
Chipboard – made from glued and compressed timber chips.
Medium Density Fibreboard (MDF) – made from timber pulped into fibre then compressed into boards. It is sometimes also known as Craftwood.
2. Provide students with a variety of small samples or off cuts of wood composites. Off cuts can be sourced from timber yards, cabinet makers and some hardware stores that cut timber.
3. Ask students to investigate, record and compare the properties of the different composite materials compared to normal timber using tools like a saw, sandpaper, hammer, nails, screws, wood glue and weights to measure strength and bend.
4. Longer term properties can be observed by leaving pieces outdoors for a period or soaking in water and leaving for a short time.



Follow Up

- Based on their investigations students report on and compare the differing properties of wood composites
- Ask students to research new cutting edge wood-based composites and materials like nano crystalline cellulose which is reported to have strength properties greater than Kevlar.
- Review the different exhibition pieces that were made or built from wood composite materials.

5. Using wood - indigenous knowledge

Indigenous people have a deep knowledge of the different properties of trees and wood. It is one of the most basic and useful materials in traditional daily life being used for tools, food gathering, warmth, shelter, hunting, art, music, communication, ceremony, water transport and more.

Aim:

To provide students with a practical opportunity to make a miniature version of a traditional indigenous wooden object.

Activity:

1. Introduce the topic and encourage students to research particular aspects of Indigenous wood use. Some examples include tools, canoes, shelters, hunting equipment, sport, weapons, music, carrying.
2. Ask students to search for and bring naturally suitably shaped found wood pieces suitable for making a miniature version of a particular object they have researched.
3. Shape and modify pieces using coarse sandpaper or suitable wood files.



Follow up

- Ask students to keep a journal of the research and making of their object. Include an explanation of its traditional use and where possible identify the tree and wood used for its construction.
- Create a class display and invite other classes to view and discuss with your students.
- Invite an indigenous speaker into the classroom to share their knowledge of traditional technology.

6. Indigenous message sticks

A message stick is a form of communication traditionally used by indigenous people. Messages are painted, carved or burnt into the wood to help the carrier remember a spoken message and to show the message is genuine to those who receive it.

For excellent background information go to:

Message Sticks: rich ways of weaving Aboriginal cultures into the Australian Curriculum

<http://qmtalksscience.com.au/2012/11/06/message-sticks-rich-ways-of-weaving-aboriginal-cultures-into-the-australian-curriculum/>

Activity

Ask students to research message sticks, then design and make their own using a solid piece of wood, 20 to 30cm in length. Use sandpaper to round the edges.

Follow Up

- Encourage students to display their message sticks and to share their messages with others.
- Ask students to research and present other forms of communication that do not use spoken or written words. Some examples might include cave paintings, smoke messages, semaphore signals.

7. Wood workers

Contact a local carpenter, wood turner or wood craftsperson who might be willing to talk to students about their craft and display some of their work. Have students research and prepare interview questions beforehand

Invite an architect to talk to students about the design process they go through before building. Have students research and prepare interview questions beforehand.

Invite a local member from the local Society for growing Australian plants to talk about significant Australian timber trees and their growth, history, use and environmental importance.

Encourage students to find interesting and unusual images of different functional and aesthetic uses of wood. Make a wall collage from the images.

Challenge students to think scientifically by asking them to design simple experiments to explore the properties of different woods and composite wood materials.

8. How wood is made

Aim:

To develop an understanding of how wood is made by trees.

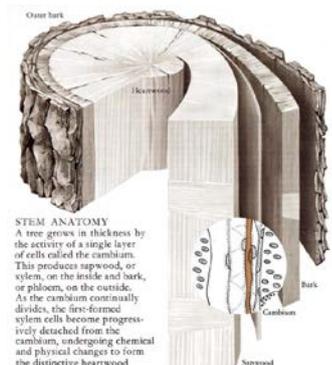
Activity:

1. Provide students with hand lens or magnifying glasses and sawn cross sections of small pine logs or branches. If necessary sand the wood beforehand to bring out the grain.

2. Ask students to observe the fine detail and pattern of what they see noting differences in different sections of the wood. Draw what they see then research the different sections they are observing and its role in keeping the tree alive.

Follow up

- Go to <http://woodmagic.vt.edu/kids/> for interactive activities on how wood grows.



Australian curriculum connections

The exhibition and education pack respond directly to the Australian Curriculum for students at different levels in different Learning Areas.

For more detailed information go to: <http://consultation.australiancurriculum.edu.au/>

Australian Curriculum: The Arts

Foundation to Year 10

Draft for consultation

July 2012

Subject: Visual Arts

Years 3 and 4 strands

Making

4.2 Investigate and experiment with the qualities of different media and techniques to develop intended effects

General capabilities

CCT, ICT, LIT, PSC

Cross-curriculum priorities

SUST

4.3 Develop art-making techniques using, media, visual arts practices and viewpoints

General capabilities

ICU, PSC, EB

Cross-curriculum priorities

SUST

Responding

4.8 Recognise and describe how images, objects, forms and ideas in visual arts works can be considered from different viewpoints

General capabilities

CCT, PSC, LIT, ICU

4.9 Explore and explain visual arts works and comment on the connections with Australia, the Asia region and other world regions

General capabilities

CCT, ICU, LIT, PSC

Cross-curriculum priorities

AAEA, SUST

Arts subjects and learning areas

HIS

Years 5 and 6 strands

Making

6.1 Experiment with and create 2D, 3D and 4D images and objects based on imagination and a deepening understanding of their world

General capabilities

CCT, ICT, NUM

6.2 Select and use different media and techniques to explore visual arts ideas

General capabilities

CCT, ICT

Cross-curriculum priorities

SUST

Responding

6.7 Investigate values and meanings in their own and others' visual arts works

General capabilities

CCT, LIT, EB

Cross-curriculum priorities

SUST

6.8 Identify and discuss a range of visual arts works and how they may be interpreted in different ways

General capabilities

CCT, LIT, PSC, ICU

Cross-curriculum priorities

SUST, ATSIHC

Years 7 and 8 strands

Making

8.2 Investigate the practices and viewpoints of art, craft and design and the connection to and influence on aesthetic and expressive intention when imagining and planning

General capabilities

CCT, ICT, NUM

Cross-curriculum priorities

SUST

8.3 Reflect on their own and others' visual arts practice recognising the safe and sustainable use of materials and processes
General capabilities
CCT, ICT, ICU, NUM, EB
Cross-curriculum priorities
SUST

Responding

8.7 Attribute purpose and meaning to visual arts works through a range of perspectives
General capabilities
CCT
Cross-curriculum priorities
SUST

8.8 Explore and explain viewpoints through critical analysis of a range of visual arts works
General capabilities
CCT, LIT

Years 9 and 10 strands

Making

10.2 Investigate and explore the perspectives on and in the arts' practices of other artists in relation to their own ideas about design, symbols, objects and spaces
General capabilities
CCT, ICT, NUM
Cross-curriculum priorities
SUST

10.3 Experiment with, reflect on and refine the connections in their own work between viewpoints, materials, practices, mediums, techniques and processes
General capabilities
CCT, ICT, ICU, NUM, EB

10.4 Investigate and explore the perspectives on and in the arts' practices of other artists in relation to their own ideas about design, symbols, objects and spaces
General capabilities
CCT, ICT, ICU, NUM, EB

10.5 Make informed decisions about the ways their own and others' visual arts works communicate meaning to audiences
General capabilities
ICT, ICU, NUM, PSC, EB
Cross-curriculum priorities
SUST

Responding

10.7 Evaluate and share with others their understandings about the and why visual arts works are made, what they are about and how they are understood in different ways
General capabilities
CCT, PSC, LIT, ICU

The Shape of the Australian Curriculum: Technologies August 2012

The exhibition and related activities provide opportunities to connect with the following scope and sequence objectives from the **Shape of the Australian Curriculum: Technologies** document.

Design Technologies Years 5 and 6 Scope and Sequence

Knowledge and Understanding

- critically examine technologies, materials, systems, tools and equipment that are used regularly in the home and in local, national or global communities, with consideration of ethics and sustainability
- Develop an understanding of the factors that influence the design, innovation and use of common technologies in order to consider why and for whom the technologies were developed

Processes and Production Skills

- critique ethical and socially responsible solutions to design problems, focusing on design ideas and local and global systems, materials, tools and equipment
- create, modify and test ideas
- safely design, plan and produce purposeful, enterprising and high quality solutions for personal, home and some community-based situations, taking account of social and cultural values
- identify and use criteria to evaluate their own and others' processes and solutions taking account of users, resources, sustainability, ethics, and cultural and personal values.

Australian Curriculum: Science

Year 4

Content

Living things, including plants and animals, depend on each other and the environment to survive (ACSSU073)

Natural and processed materials have a range of physical properties; These properties can influence their use (ACSSU074)

Science Inquiry Skills

Suggest ways to plan and conduct investigations to find answers to questions (ACIS065)

Safely use appropriate materials, tools or equipment to make and record observations, using formal measurements and digital technologies as appropriate (ACIS066)

Evaluating

Reflect on the investigation; including whether a test was fair or not (ACIS069)

Literacy

Personal and social capability

Critical and creative thinking

Communicating

Represent and communicate ideas and findings in a variety of ways such as diagrams, physical representations and simple reports (ACIS071)

Year 5

Content

Living things have structural features and adaptations that help them to survive in their environment.

Year 7

Content

There are differences within and between groups of organisms; classification helps organise this diversity (ACSSU111)

Some of Earth's resources are renewable, but others are non-renewable (ACSSU116)

Australian Curriculum: English

The education pack links closely to all levels of the English curriculum in the following strands:

Language

Language for interaction

Expressing and developing ideas

Literacy

Texts in context

Interpreting, analysing, evaluating

Interacting with others

Creating texts

Australian Curriculum: v4.0 History

Year 7

Content Descriptions

Historical Knowledge and Understanding

Contacts and conflicts within and/or with other societies, resulting in developments such as the expansion of trade, colonisation, war and peace treaties.

Depth Studies

The Mediterranean World

Choose a case study: Egypt, Greece, Rome

The Asian World

Choose a case study: China, India

Year 9

Content Descriptions

Historical Knowledge and Understanding

The extent of European imperial expansion and different responses, including in the Asian region

Year 10

Content Descriptions

Historical Knowledge and Understanding

The globalising world

The environment movement (1960s – present)

Draft F-12 Australian Curriculum: Geography To February 2012

Year 2 Geographical Knowledge and Understanding

Environment

Content description

The environment is the source of every material thing we use or consume.

Elaborations

- identifying the sources of some of the material things they use or consume, such as wood to make paper
- understanding the principles of reduce, reuse, recycle and replace and how they relate to caring for the environment

Content

The significance of an environment or place contributes to how it is managed or used.

Elaborations

- exploring features of different environments that are of local relevance and investigating how they might be managed or cared for, for example, forests, rivers or national parks

Year 3 Geographical Knowledge and Understanding

Environment

Content description

The use of natural resources and disposal of waste affects the environment

Elaborations

- understanding that sustainability means using resources at less than or equal to the rates of renewal
- exploring ways natural resources are utilised, for example, metal from mining, paper from trees, glass from sand

Year 5 Geographical Knowledge and Understanding

Environment

Content description

There are a variety of climates and each climate results in a distinctive type of natural vegetation and use by people.

Elaborations

- exploring the relationship between climate and vegetation such as dense vegetation in tropical zones and sparse vegetation in arid zones
- locating and comparing selected Australian climates and other world climates
- comparing the local environment, its uses and population, to other parts of Australia and the Asian region, for example, alpine, desert, coastal, river, savannah

Content description

Human activities can change environments and places over time

Elaborations

- investigating how development changes environments by exploring a contemporary sustainability issue, such as urban planning
- investigating the effects of European colonial presence, including examples such as vegetation clearance, drainage, irrigation, farming,

Content description

Sustainability is about maintaining the capacity of the environment to support our life

Elaborations

- considering how and by whom decisions are made about how places are used and sustained, for example the role of government, business, environmental groups and individuals in using a natural environment
- exploring how Aboriginal Peoples and Torres Strait Islander Peoples have cared for the Australian environment over a long period of time

Year 7 Geographical Knowledge and Understanding

Content description

Environmental resources (including renewable resources, non-renewable resources and continuous resources) have different characteristics that affect their use and significance.

Elaborations

- describing the variety of environmental resources, and their classification into renewable, non-renewable and continuous
- examining the spatial distribution of selected environmental resources
- explaining the uses of environmental resources and their economic and social significance

Year 9**Geographical Knowledge and Understanding****Content description**

Biomes produce the foods we consume and many other commodities, such as plant materials and a range of ecosystem services.

Elaborations

- identifying and describing the biomes in Australia and throughout the world in terms of location, characteristics and the foods they produce
- investigating an everyday use of plant materials for non-food purposes (for example, cotton for clothing) and where these materials come from

Year 10**Geographical Knowledge and Understanding****Content description**

Environmental challenges of the future have environmental, economic and social consequences

Elaborations

- evaluating the extent to which particular environmental challenges threaten the sustainability of the source function, sink function, service function and spiritual functions of the environments that support human life and welfare
- evaluating their economic and social consequences, at present and in the future

Content description

There are interrelationships between human wellbeing and conflict

Elaborations

- classifying and mapping the different types of conflict around the world and explaining the pattern
- considering the role and status of environmental resources in conflicts
- analysing the effects of conflicts on places

Useful websites

Forests and Timber Education

<http://woodmagic.vt.edu/kids/>

<http://www.dpi.vic.gov.au/forestry/education-training/trees-at-work/section-2-timber>

<http://www.woodlandtrust.org.uk/en/why-woods-matter/Pages/woods.aspx>

<http://www.forestlearning.edu.au/forests-sustainability/wood-stores-carbon>

<http://www.pir.sa.gov.au/forestrymatters>

[http://www.forestry.gov.uk/pdf/KS2TeacherpackdocEnglishFINAL.pdf/\\$FILE/KS2TeacherpackdocEnglishFINAL.pdf](http://www.forestry.gov.uk/pdf/KS2TeacherpackdocEnglishFINAL.pdf/$FILE/KS2TeacherpackdocEnglishFINAL.pdf)

<http://www.timber.net.au/>

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

<http://extension.oregonstate.edu/catalog/4h/4-h4422c.pdf>

<http://www.youtube.com/watch?v=Q2RAAe9IBwE>

Design

<http://www.tribestudio.com.au/#/Eat-Green-Design>

<http://www.manoarchitects.com/>

<http://www.yardsaleproject.co.uk/>

<http://www.chairblog.eu/category/chair-designer/pablo-reinoso/>

<http://www.marcnewson.com/ProjectImages.aspx?GroupSelected=0&ProjectName=Wood+Chair%0d1988+-+Cappellini&Category=Products>

<http://www.dezeen.com/2010/05/07/tailored-wood-by-raw-edges-for-cappellini/>

<http://www.wallpaper.com/design/starbucks-launches-a-coffee-laboratory-in-amsterdam/5674#59994>

<http://eat-a-bug.blogspot.com.au/2011/08/experimental-wood-structures-at-eth.html>

<http://www.mnn.com/green-tech/transportation/photos/11-awesome-bikes-made-of-wood/a-green-life-cycle>