

FORESTRY & SUSTAINABILITY

A cross curricula classroom focus on forestry and sustainability brought to you by:

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FOR THE FUTURE

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F I T E C
ākorenga mo te wātau



TUNING INTO TREES

- Divide students into brainstorming groups and pose the following questions (allowing 5 mins for each question) and make an extensive list of all class answers.
'for what reasons do people plant trees?'
'for what reasons do people chop down trees?'
'for what reasons do we plant forests in New Zealand?'
- Have students consider why people plant trees in greater detail and in specific contexts, **eg** the many reasons that:
 - sheep, cattle, and dairy farmers plant trees
 - people plant trees in home gardens
 - councils plant trees in cities in parks and on bare land
 - we plant large plantations of (mainly *pinus radiata*) trees in New Zealand.
- Before students begin to research these topics, introduce the idea that there could be many reasons for any of these people or organisations to plant trees. Challenge students to mind-map a list of reasons using your local council as an example? **eg**
 - beautify the city and provide recreational opportunities
 - to attract tourists to the city/town
 - to attract bird life to the city/town.
 - planting a plantation to provide future income for the city
- Discuss with students how they will find the answers to these questions? Who could they ask? Could they use **Google** to find these answers? What comes up when they type in: **planting trees on farms+new zealand?**

SOME USEFUL RESEARCH WEB LINKS

www.ew.govt.nz/PageFiles/3354/section1.pdf
(Environment Waikato Booklet – Trees on Farms)

www.goodground.com/page?rd=1&i=2709
(Planting trees on lifestyle blocks)

www.insights.co.nz Select the Forest Habitat

Learning Areas and Indicative Objectives

Science: Living World

- The important contribution trees make to our environment and the positive role they can play in climate change and the important roles that exotic trees play in our forests.

Social Sciences: Place and Environment, Economic World

- Understanding the economic and environmental partnership between people and forests and the roles they both play.

Links to English, Technology. Best suited to Levels 2-4

FORESTS IN NEW ZEALAND

- Have students guesstimate the % of New Zealand that is covered in forests. Are they surprised that it is as much as 30%? Where is the nearest forest to the school? What trees are growing in this forest? Why is it important to the district? Can they come up with any other reasons (not previously identified) as to why they are important and how do they help us? Brainstorm ideas, **eg**
 - they provide timber for building house and furniture
 - they absorb greenhouse gases
 - they provide homes and food for birds
 - they are great for tramping in and exploring.
- Do students know the difference between an exotic and a native forest? Tell them that indigenous is the name we give to native forests. Can they find out what this means (a plant or tree that comes from that country)?
- How many indigenous tree species can students name? How many exotic tree species can they name?

TIMBER SPECIES AND SUSTAINABILITY

- Can they suggest why we have planted so many exotic forests in New Zealand? From what type of trees would the wood we need have come from if we hadn't planted exotic forests. Do we still cut down indigenous trees?



EXTENSIVE PLANTINGS OF EXOTIC TIMBER FORESTS

- What do students understand the word/s sustainable and sustainability mean? In what way would this apply to our forests in New Zealand?
- Have groups of students conduct web research on uses of various species and sustainability of our forests at: www.nzwood.co.nz/what-wood/timber-species/

SIMPLY PERFECT PARTNERS



BEAUTIFUL NATIVE FORESTS – HOME TO BIRDS

- Start research as a class by discussing the facts provided in the 'Indigenous Species' section. Why was the 1993 Forests Act change so important for our indigenous species? How do we manage our forests today in a sustainable way?
- For further research and discussion on sustainability, print out the Sustainability information pdf and distribute to students. Have students pay particular attention to the environmental benefits of sustainable forest management.
- Assign each group a mix of exotic and indigenous species. Have them research: the special qualities of each species; where they are grown; any restrictions; environmental benefits; how it is used ... Have groups report back.

HOW TREES AND PLANTS WORK

- Have any students heard of the Carbon Cycle? Using a data projector (or online research) work through the concepts at:
www.geography4kids.com/files/cycles_carbon.html
- Discuss the following carbon cycle concepts:
 - carbon is the basis of life in fact 99.9% of all life on Earth is carbon-based and we all need it to survive
 - trees and plants 'breathe' in carbon dioxide from the atmosphere and make sugar/starches and oxygen
 - animals and humans eat the sugars/starches and breathe in the oxygen and breathe out carbon dioxide
 - carbon dioxide is used again by the plants
 - the carbon cycle is the world's recycling system.

TREES HELP PREVENT CLIMATE CHANGE

- Through discussion find out your students' current knowledge about climate change. Before research begins, have them speculate on the positive role that forests can play.
- Have students conduct research at: www.nzwood.co.nz > select Sustainability > select Climate Change. Ensure students understand the following:
 - what is generally recognised as the cause of climate change that could cause global warming?
 - climate has always changed throughout history
 - the fears that many scientists and countries have about increased CO₂ emissions into the atmosphere
 - how increasing our forest area can help remove CO₂ from the atmosphere?
 - the planting of plantation forestry can be part of the solution to offset man-made CO₂ emissions.
- As a class, conduct further 'wood and climate change' research at: www.insights.co.nz > select > Wood and Climate Change > select the 'wood to the rescue' section. Can they explain the idea of 'forests as carbon sinks'?

FURTHER DIRECTIONS

- What jobs and careers are there in the forestry industry? Carry out research at: www.woodcareers.co.nz Report back on a career that they would find interesting.
- Explore the history of exotic forestry in New Zealand from the 1800s until the present day. Present major events as a timeline. (www.teara.govt.nz/en/exotic-forestry) Explore the video and images gallery on the website.
- Invite a representative from your local DOC office to speak to the class about the major role that forests play in animal and soil conservation. Have students find out if there are any conservation projects taking place in your area, eg native bird predator control. Ask if there is anything they can do to help.
- Have all students write a personal report on the importance of forests and forestry to New Zealand.



Forestry and Climate Change: A Convenient Truth

A NEW FREE DVD FOR SCHOOLS

FITEC has made available a 17-minute video presentation, produced by FAO and the Forestry Commission of the UK, showing how forests can contribute to the mitigation of climate change, stressing the importance of reversing forest loss. Forests store more carbon than all the world's remaining oil stocks. Continuing deforestation and forest degradation account for almost one-fifth of the world's greenhouse gas emissions – more than the entire global transport sector. With striking imagery and simple language, this informative presentation is suitable for students to learn about caring for the future of the planet. Schools will find that the DVD is an invaluable digital resource about solutions to climate change.

- The DVD has been sent to all secondary schools but is also very suitable for primary and intermediate schools.
- Schools can view the DVD online, download the DVD online or order a copy of the DVD at the following website:

www.fao.org/forestry/52980/en/