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National
TreeDay®



**ENVIRONMENTAL
EDUCATION KIT**



National Tree Day is organised by Planet Ark in partnership with Toyota Prius

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The 'Get Growing!': Environmental Education Kit has been produced by Planet Ark in partnership with the Australian Association for Environmental Education as an education and learning resource for teachers and students participating in Schools Tree Day and National Tree Day. *

This resource has been designed to increase the environmental, educational and community development outcomes of mass plantings of locally indigenous plant species and bush regeneration in benefiting Australian ecosystems, thereby satisfying the Aim of the National Tree Day project. **



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'Get Growing!' Environmental Education Kit

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* National Tree Day 2008 is organised by Planet Ark in partnership with Toyota and the AMP Foundation.

** For more information on the Vision, Aim and Objectives of National Tree Day, please go to: treeday.planetark.org.

*** The Australian Association for Environmental Education (AAEE) is the premier, national, professional association for those who identify themselves as working in the fields of environment or sustainability education.

**** The National Tree Day Environmental Advisory Committee was set up to provide technical and specialist advice to enhance the environmental and social outcomes of the National Tree Day project. Member organisations include: Trees For Life, the Australian Association of Bush Regenerators, Greening Australia, Landcare Australia, the Australian Local Government Association and Education for Sustainability. For more information on the NTDEAC, please go to treeday.planetark.org.

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UNIT 3: WHY DO WE VALUE NATIVE PLANTS?



TEACHERS NOTES

UNIT OBJECTIVES

After completing this unit students will:

- Know the best places to plant native plant communities in their local area
- Understand which native plants need protection in their local area
- Understand that some trees have iconic status because of their historic significance, age, and the roles they played in the past
- Know that some native plants are threatened, or have become extinct, in Australia

HELPFUL TERMS AND DESCRIPTORS (SEE GLOSSARY FOR DEFINITIONS)

- Aspect and Site
- Bush Tucker
- Conservation
- Iconic Trees
- Local Provenance
- Native Plants
- Propagation
- Bush Tucker



FOCUS QUESTIONS

1. (Stage 1) What is growing in our school grounds? OR (Stage 2 and 3) Where is the best place to put native plants in our local area and which ones should we plant?
2. Which plants should we conserve in our local area?
3. How and why should we conserve native trees and plants?
4. Why are some trees so well known?
5. Which native plants are threatened, or have become extinct, in Australia?

OTHER RESOURCES AND WEBSITES SUPPORTING THIS UNIT

Throughout this resource you are encouraged to be in contact with your local Bushcare, Coastcare, Landcare, National Parks or council representative. They have invaluable knowledge that will ensure your projects create the best living environment for local species. It may be a good idea to read through the entire unit and make a list of questions or key points where local expertise will be required, in order to make the best use of their and your time.

GENERAL INFORMATION ON AUSTRALIAN PLANTS

<http://asgap.org.au/>
<http://www.anbg.gov.au>
<http://www.greeningaustralia.org.au/resources/resources>
<http://www.landcareonline.com/page.asp?plD=43>
<http://www.gullivermedia.com.au/eco.html>

INFORMATION ON ORGANISING A PLANTING ACTIVITY AT YOUR SCHOOL

<http://treeday.planetark.org/teachers>

BUSH TUCKER

<http://www.teachers.ash.org.au/bushtucker/>

ANIMAL LIFE IN TREES

<http://www.gould.org.au/wildlifecams/videos.asp>

CREATIVE WORKS

POEMS:

Bellbirds by Henry Kendall; Flying Squirrels by Banjo Patterson

BOOKS:

Where the Forest Meets the Sea by Jeannie Baker

SONGS:

Home Among the Gum Trees and Rip Rip Woodchip by John Williamson

PAINTINGS:

The Pioneers by Frederick McCubbin; Sherbrooke Forest by Tom Roberts

BACKGROUND INFORMATION

When looking to plant the right type of native trees, shrubs or grasses for your local area, it is always good to find out what the original vegetation of the area was like. This is because these original plant communities have the best chance of survival. They have long adapted to the soil and local climate conditions and will help to restore the natural character of an area, as well as providing food and shelter for endemic animals. These plants also play a supporting role for a variety of native insects and fauna and by replanting these species we help ensure they survive in preference to becoming threatened or extinct.

A healthy community garden begins with careful planning. Talk to your local council, Bushcare, Landcare or National Parks officer about which species are appropriate for your neighbourhood. Your trees should be properly placed to avoid collisions with power lines and buildings. With a little research and a simple layout, you can also produce a landscape that will cool homes and public places in summer, and provide shelter from the winter winds, meaning that your plants will make your environment not only attractive, but help make your community buildings more sustainable.

A proper vegetation plan takes each tree, shrub, ground cover or any other plant into consideration:

Height - Will the tree or plant bump into anything when it is fully grown? Is it too close to buildings or other structures? Will the roots cause a problem?

Canopy spread - How wide will the tree grow? How far apart do you need to plant them to provide room for healthy growth? Check the spread of the species before you plant it.

What is the nature of the plant? - Will it lose its leaves or bark at any time of the year and, if so, will this cause a problem for gutters and drains? Consider that some Australian plants are more likely to lose their leaves in summer (e.g. some eucalypts).

Form or shape - A columnar tree will grow in less space. Round and V-Shaped species provide the most shade. Make a note of where north is and the passage of the sun throughout the day at different times of the year to see where shade may be needed.

Growth rate - How long will it take for your tree to reach its full height? Slow growing species typically live longer than fast growing species. Many Australian shrubs like acacias, grow quickly and die after a relatively short time making way for larger trees. Have a long-term strategy for plant life and replacement where necessary.

Soil, sun, and moisture - How much of each of these do your chosen plants need? Consider the extremes of climate over time in Australia, including the incidence of drought and floods.

Fruit and flowers - Be aware that some trees shed fruit or flowers that can become messy or slippery (however this is mainly a consideration for exotic plants like jacaranda).

What insect and fauna community is the vegetation likely to attract and/or support? Do you want to attract certain birds or butterflies, or perhaps provide a food source for insects so the frogs in your garden pond also have a ready food source?

Some trees bring fond memories of the past or have become part of our history. The **Wollemi Pine** grew during the dinosaur age and was thought to be extinct, but was found in a canyon within a National Park north-west of Sydney. It has become famous and botanists have now propagated it for thousands to enjoy throughout the world. The Wollemi Pine is available for ornamental and educational purposes as well as for use in contained garden plantings.

The **Gloucester Tree** is probably Western Australia's most famous karri tree. This 60-metre-high giant towers above the forest surrounding Pemberton, and was one of eight lookout trees built between 1937 and 1952 in the karri forest as a practical response to one of the most serious threats to forest communities in the South-West: fire.

The **Aleppo Pine** (*Pinus halepensis*), otherwise known as the **Lone Pine**, has been planted at the Australian War Memorial in Canberra accompanied by the following inscription:

"After the capture of the Lone Pine ridge in Gallipoli (6 August 1915), an Australian Soldier who had taken part in the attack, in which his brother was killed, found a cone on one of the branches used by the Turks as overhead cover for their trenches, and sent it to his mother. From the seed shed by it she raised the tree, which she presented to be planted in the War Memorial grounds in honour of her own and others' sons who fell at Lone Pine."

Your tree planting activity may also recognise some historic event or well known person in your community.

STAGE 2

FOCUS QUESTION 1: WHERE IS THE BEST PLACE TO PUT NATIVE PLANTS IN OUR LOCAL AREA AND WHICH ONES SHOULD WE PLANT?

Time to revegetate

Materials

Four copies of an aerial image of your school grounds (could be from Google Earth, or if you can't view your school on Google Earth, take your class on a walk around the grounds and draw a rough map based on their observations).

ACTIVITY

Explain to the class that in order to learn which native plants should be planted in your school grounds and to determine where the best place to plant would be, they are going to investigate and draw up a vegetation plan for the school.

Divide the class into four groups and, when in the playground, provide each group with a copy of the aerial image of the school grounds, on a clipboard.

Each group should study their aerial map and see how it compares to the grounds they are on, and identify areas of the school grounds that could be replanted (they may be weed/exotic species dominated, or neglected parts of the site) or where additional native plants could be planted. Emphasise that in some cases the plants that are already there may be the best ones to have in that place and should therefore remain undisturbed.

For each identified revegetation or new planting area, each group should note the soil type, climate and aspect of the site, as well as the purpose of the site within the school grounds and recommend which native plants they think should be planted in each of the areas. Students should consult with local bush regeneration or council officers; find a native plant guide in the library, or visit Internet sites like <http://www.sgaonline.org.au/plants.html> for more information.

Groups return to the classroom and appoint a speaker who will give the results of their survey, outlining the areas they thought could be possible planting sites, the plants they chose for revegetating the site, and why they chose those particular plants (their reasons may be biological, aesthetic, providing a practical purpose e.g. to provide shade for lunch areas or reduce traffic noise, as a teaching learning centre for reading or science, or for a bush tucker garden).

FOCUS QUESTION 2: WHICH PLANTS SHOULD WE CONSERVE AND GROW IN OUR LOCAL AREA?

Planting for the future

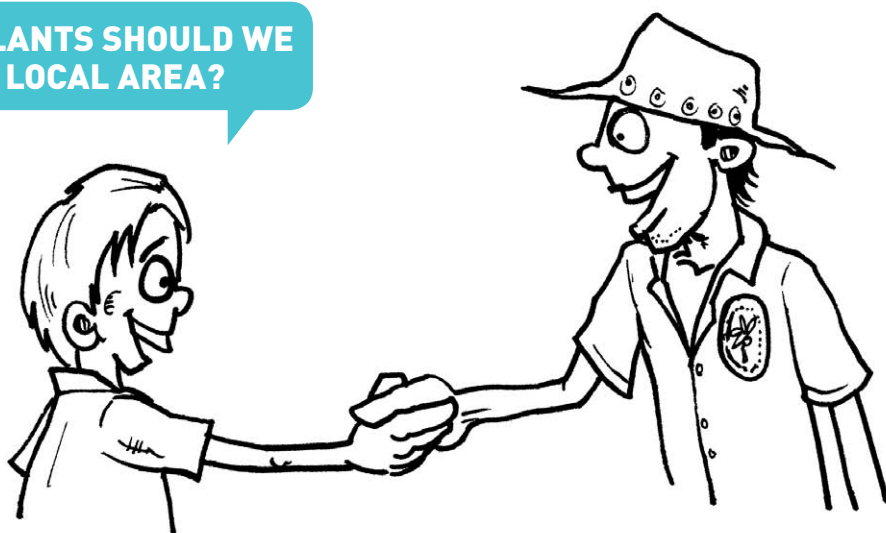
Materials

Each of the four proposals generated from the previous activity in Focus Question 1.

ACTIVITY

Students decide, through research and discussion, the best option (or mix of options) for revegetating a specific site in the school from the four proposals presented in Focus Question 1.

The class should work to build a combined model that can be presented to a local Bushcare or council officer for feedback (e.g. to check that local provenance is protected and encouraged), before presenting the final model to the school's parent teacher group. Go to treeday.planetark.org/schools for more information on how to prepare for your planting activity. The class can then prepare a letter inviting parents and community members to help with the planting day.



FOCUS QUESTION 3: HOW AND WHY SHOULD WE CONSERVE NATIVE TREES AND PLANTS?

Let's get creative!

Materials

Creative pieces about trees and the bush (see Teacher's Notes for suggested resources)

Activity Sheet 3.3

ACTIVITY

Remind students that in Unit 2 they learnt about the many economic and practical things we use trees for (like paper, furniture and medicine).

Encourage the class to consider that trees and plants are also a source of inspiration for many creative expressions like poetry, song, paintings, photographs, sculpture and books.

Split the students into five groups, and allocate each a different artwork to study.

Each group should develop a short presentation they can make to the rest of the class where they share the content of their piece (either through acting, singing, recital or critique). Each group should also share what they think the meaning or moral behind their piece is, and what can be learned from the artists' message.

After each group has shared their presentation, as a class consider what may have inspired each of the artists to write, draw, paint or create what they did (the beauty of a certain landscape, frustration at the way areas were being degraded, etc). Suggest the conclusion that it is important to conserve native plants for inspiration and creative expression, as well as for ecosystem wellbeing and human needs.

Help students complete Activity Sheet 3.3 to summarise their thoughts.



FOCUS QUESTION 4: WHY ARE SOME TREES SO WELL KNOWN?

Celebritrees!

Materials

4 pictures of famous Australian trees (see activity below for suggestions)

Activity Sheet 3.4

ACTIVITY

Show students pictures of four iconic Australian trees (for example the Tree of Knowledge (QLD and NT), the Lone Pine (ACT), the Wollemi Pine (NSW), the Bicentenary Tree (WA), the Coolabah Tree (QLD), the Burke and Wills Dig Tree (QLD), the Grandis (NSW), the Gloucester Tree (WA), or Aboriginal Scarred, Marked or Corroboree Trees around the country).

As you look at each picture, ask the class why the tree is well known (or explain it to them), and discuss the history and significance of the tree.

Discuss with students that trees can be well known at different levels - for example some trees are famous around the state, country or the world (like many of the trees they have just seen), or they can be of significance at the local level within a family, school, community or region.

Ask students if there is a tree in their district which has become well known for some reason (this may be because an historic event took place there, it brings back an important memory, it has cultural relevance or it was planted by a famous or founding person or family). Discuss why this local tree is important to your community and its history and which trees could become famous in the future.

Students complete Activity Sheet 3.4.



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UNIT 3

FOCUS QUESTION 5: WHICH NATIVE PLANTS ARE THREATENED, OR HAVE BECOME EXTINCT, IN AUSTRALIA?

Protecting our natives

Materials

Picture and details of four threatened plants in your state
(see <http://www.environment.gov.au/biodiversity/threatened/publications/plants.html>).

Activity Sheet 3.5

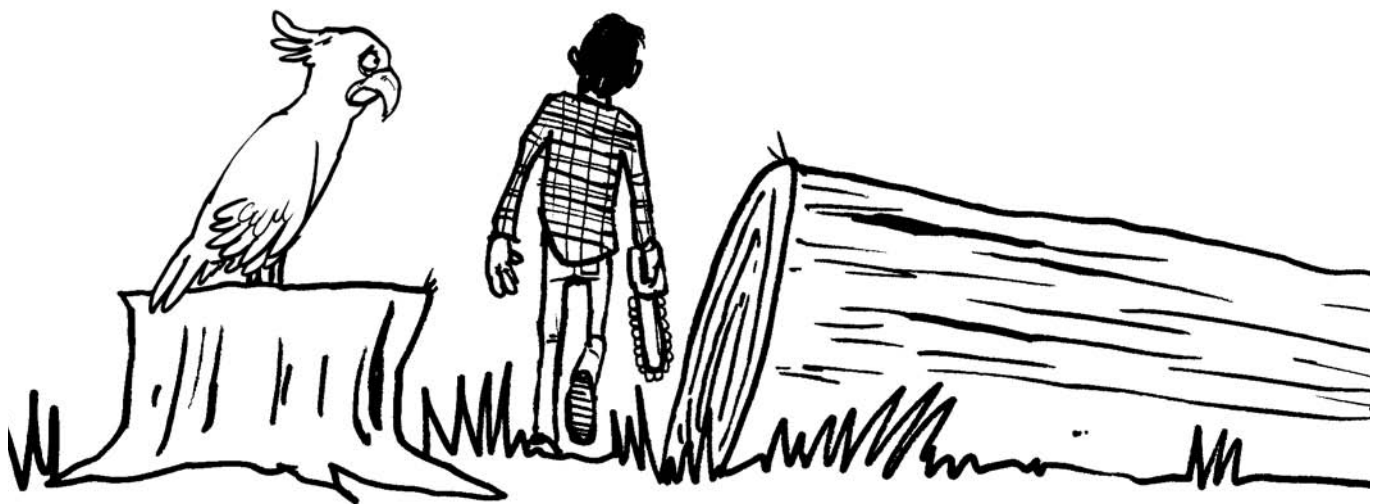
ACTIVITY

Discuss with students the following information: Australia has a large and fascinating mix of native flora – our distinctive plants include the gum tree (or eucalypt), of which there are some 900 species. Other common plants include wattles, banksias, bottlebrushes, paperbarks, tea trees, grevilleas and hakeas. In total, Australia has almost 16,000 native and nearly 2,000 introduced plant species – giving a total of almost 18,000 plant species. However, more than 60 Australian plant species are now thought to be extinct, and over 1,180 are threatened.

Ask students to give reasons why this is a bad thing. Who else (besides the plant) suffers when plants become threatened or extinct? (e.g. local wildlife who rely on that species for food or shelter, people who enjoy the diversity of many plants, the ecosystem as a whole as there are less species to perform all the valuable roles plants play as discussed in Unit 1).

Help students complete Activity Sheet 3.5 by showing pictures of four plant species currently under threat in your state. Consider which animals may suffer from their loss, and how each of them may have come under threat (e.g. changes to the land may have occurred due to practices such as farming, building of roads, towns and cities. Farming on Australian soil has threatened the survival of many native plant species through clearing, the use of fertilisers, pesticides, loss of soil and soil compaction from animals like cattle).

Students should then brainstorm ideas for the 'What can we do?' column and share them with the class. Use the suggestions to compile a class poster on how to save endangered native plants in your state for publishing in the School Newsletter.



Activity Sheet 3.3 – Stage 2:

Let's get creative!

Name: _____ Date: _____

The creative piece that my group studied was _____

by _____

My favourite part of this piece was _____

The meaning behind it was _____

Nature inspires me to be creative too! Here is a picture, story or poem I'd like to share:

Activity Sheet 3.4 – Stage 2: Celebritrees!

Name: _____ Date: _____

The things we learned about four famous trees were:

Name and Picture	Why is it famous?	Where is it located?	How old is it?

A famous or popular plant in my local area is the _____

Activity Sheet 3.5 – Stage 2:

Protecting our native plants

Name: _____ Date: _____

Four threatened native plants in my state are:

Name and Picture	Why is it threatened?	Which animals rely on it?	What can we do?

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Unit 3 - Feedback and Evaluation Form

This resource has been developed to help students get the most out of their National Tree Day and/or Schools Tree Day event, and to provide learning experiences that enable them to grow into environmental custodians.

In order to improve this resource in the future, we would greatly appreciate your feedback.

Once completed, please fax this form to **02 4757 8980** or post to

Planet Ark Environmental Foundation, PO Box 4, Wentworth Falls, NSW 2782

Please answer the following questions:

Teacher Name: _____

School Name: _____

Grade/Class: _____

Which state do you teach in? _____

In which Local Government Area is your school? _____

Which stage of lessons did you implement? _____

Which focus questions did you implement? _____

Did your class participate in Schools Tree Day? Yes No

If so, on what date? _____

How did you hear about this resource? _____

Please remark on the following statements on the scale provided:

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I feel the lessons were effective in teaching their stated aims	1	2	3	4	5
I feel the class was engaged by the unit content	1	2	3	4	5
I feel the lessons were appropriate for their age and level of understanding	1	2	3	4	5
I found this unit useful for incorporating environmental education into my lesson planning	1	2	3	4	5
I feel this unit helped to increase my class' knowledge about the benefits of creating healthy native plant communities	1	2	3	4	5
I feel my class is now better equipped to be environmental custodians as a result of this unit	1	2	3	4	5
(If applicable) I feel this unit gave good educational support to our Schools Tree Day event	1	2	3	4	5

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Which lesson(s) did you find were the most effective?

Which lesson(s) did you think were ineffective or inappropriate?

Was there anything about the document layout that you found frustrating?

How would you like to see this unit changed or improved for the future?

Are there any other comments, feedback or suggestions you would like to make?

Are you happy for us to contact you for further feedback? If so, please provide a contact number:

Thank you for taking the time to fill in this evaluation form.

Your feedback will ensure that we can produce the best possible resources to support the valuable work you are doing in educating our children, the future leaders of our world.