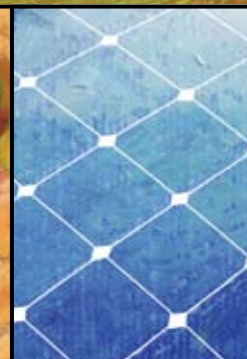
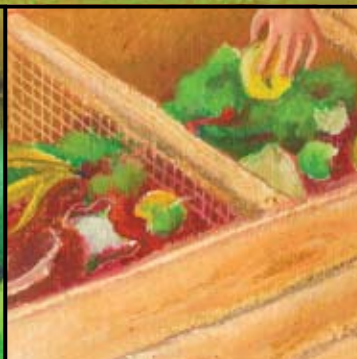
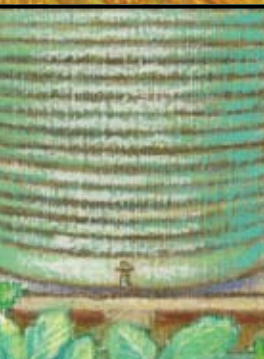




ACT
Government

Education and Training

What is a sustainable school?



Australian
Sustainable Schools Initiative
A Partnership of the Australian Government, the States & Territories

ISBN-13: 978-0-642-60550-4

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Produced by Publishing Services for the Education and Training Directorate.

Enquiries about this publication should be directed to the Education and Training Directorate:
(02) 6207 6985

This publication is also available on the internet at:
www.det.act.gov.au

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Illustrations and design by Carolyn Brooks

Printed on 100% recycled paper with vegetable based printing inks

Publication No 11/0139

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

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What is a sustainable school?

Why is sustainability important?

'Sustainable development is a simple idea of ensuring, through new lifestyles, a better quality of life for everyone, now & for generations to come.'

UNESCO 2001

This publication complements the ACT Sustainable Schools Initiative and aims to support school communities as they strive to become environmentally sustainable. The ACT Sustainable Schools Initiative assists schools to educate for sustainability, while simultaneously reducing the ecological footprint of schools. This document aims to provide teachers with a source of information from which to share ideas, develop hands on learning experiences and encourage discussion with students.

The ACT Government recognises that although the challenges are great, we have the knowledge and skills to address them. School communities have the capacity to reduce the size of their school's ecological footprint.

Education for sustainability

'Education for sustainability aims to tackle the underlying causes of unsustainable trends. The focus is on systemic change.'

Living Sustainably 2009.



What does a sustainable school look like?

There is no set definition of what a sustainable school looks like. However, a sustainable school would involve action from the entire school community including, teachers, students, business managers, canteen staff, building services officers and parents/carers.

Ideally, sustainable schools will exhibit a range of the following features, with the aim of being as carbon neutral as possible:

- ▶ producing renewable energy, including solar generation
- ▶ reducing, reusing and recycling all water on site
- ▶ recycling or composting materials and minimising waste to landfill
- ▶ purchasing sustainably
- ▶ incorporating sustainable management practices into the decision making processes and the everyday operations of the school
- ▶ reducing car use and encouraging use of public transport and particularly, active transport such as walking and cycling
- ▶ incorporating a local food supply
- ▶ utilising principles of landscape design to promote healthy indoor and outdoor environments
- ▶ maintaining vegetable and community gardens for consumption or sale
- ▶ developing a culturally rich, active and equitable community
- ▶ including sustainability perspectives through facets of the *Australian Curriculum*.

More ideas are included in the illustration on pages 12 and 13!

Sustainability as a wider challenge

International context

Many international delegates at the United Nations Climate Change Conference 2009 in Copenhagen agreed on the Copenhagen Accord, which builds on the Kyoto Protocol. The Accord states that:

'Climate change is one of the greatest challenges of our time. We emphasise our strong political will to urgently combat climate change in accordance with the principle of common but differentiated responsibilities and respective capabilities.'

As part of the United Nations Decade of Education for Sustainable Development (2005-2014). The UN has declared:

'Education for sustainable development is a life-wide and lifelong endeavour which challenges individuals, institutions and societies to view tomorrow as a day that belongs to us all, or it will not belong to anyone.'

National context

The Australian Government is working to reduce carbon pollution, create the jobs of the future and secure Australia's future prosperity.

The National Environmental Education Statement for Australian Schools, *Educating for a Sustainable Future*, outlines that as we work towards achieving our goals, schools will be important in preparing and empowering students to assume responsibility for creating and enjoying a sustainable future. Such a vision for school education is transformative. It is more than a curriculum issue and requires a whole-school approach and innovative teaching and learning.

In 2010, the then Australian Government Department of Environment, Water, Heritage and the Arts produced the Sustainability Curriculum Framework to support the sustainability priority in the Australian Curriculum.

Local context

'The ACT Government accepts the overwhelming scientific evidence that the use of our planet and its resources has already and will continue to change our climate. The Government also accepts that unless action is taken now, climate change will seriously damage our natural environment, our quality of life, and our economy.'

(Chief Minister's Message - *Weathering the Change*).

It is within these contexts that the ACT Government chooses to act for a sustainable future, with \$20 million committed to assist schools reach carbon neutrality by 2017.



ACT Sustainable Schools Initiative

What is the ACT Sustainable Schools Initiative?

The *Australian Sustainable Schools Initiative (AuSSI)*, delivered by the Environment and Sustainable Development Directorate, is a partnership of the Australian Government, the States and Territories that supports schools to work towards a sustainable future.

The *ACT Sustainable Schools Initiative* provides a whole school approach to improve the school's management of resources and facilities including energy, waste, water, biodiversity, landscape design, products and materials. It also addresses educational, social and economic issues associated with the sustainable management of a school and the school community.

Of the 84 public schools in the ACT 76 have registered as a Sustainable School. These schools have committed to becoming more sustainable and are working with their whole school community to reduce their ecological footprint. This means that schools have committed to:

- ▶ establish an environmental leadership team
- ▶ ensure a whole school approach to becoming more sustainable
- ▶ assist consultants to conduct waste, water and energy audits
- ▶ engage staff in professional development
- ▶ undertake curriculum activities that support education for sustainability
- ▶ implement Best Practice Guides
- ▶ reduce the impact of the school on the environment
- ▶ work together to develop a School Environmental Management Plan (SEMP)
- ▶ share information and support other schools.

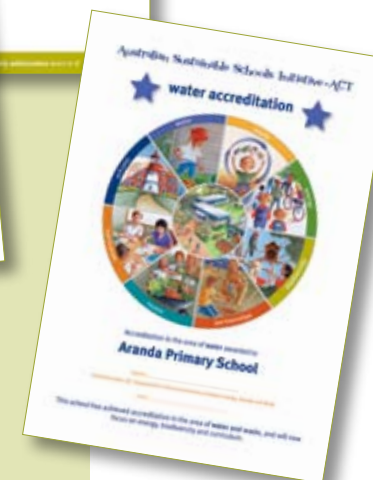


How to get involved in ACT Sustainable Schools

If you would like your school to become a sustainable school then please visit the website www.sustainableschools.act.gov.au

Benefits of being a registered ACT Sustainable Schools

Schools signed up to the ACT Sustainable Schools will receive free Best Practice Guides, curriculum materials, support from staff and accreditation. They will have had a waste, water and energy audit completed in their school. The energy audit is the first step in the Education and Training Directorate's approach to assist schools to become carbon neutral by 2017, as outlined in the ACT Government's Climate Change Strategy, *Weathering the Change*.



Water

In the past four years, most ACT public schools have received a free water audit. Each of these schools has received a comprehensive water audit report with site specific recommendations on how to reduce water consumption.

Following implementation of these recommendations, ACT public schools have saved over 250,000 kilolitres of drinking quality water.

How your school can make a difference

When trying to reduce water consumption, schools face several challenges, such as:

- ▶ understanding sustainable water management practices
- ▶ having the knowledge and skills to implement effective strategies
- ▶ educating the whole school community in order to change their behaviour
- ▶ covering the cost of implementing strategies.

Reducing water consumption and maintaining water quality requires a combination of both technical 'fixes' and behavioural changes (education).

Just as there are technical solutions for reducing energy use, there are technical solutions for reducing water consumption. Some technical solutions which save potable/drinking quality water and reduce costs include:

- ▶ installation of water efficient taps
- ▶ rainwater tanks to supply water for flushing toilets
- ▶ dual flush cisterns for toilets and
- ▶ low water use urinals.

Another technical 'fix' includes locking bubblers to prevent vandalism and inappropriate out-of-hours use.



Some water saving measures also benefit the school landscape. Planting wind breaks can reduce hot drying winds from the north and west, decreasing the need for irrigation and subsequently reducing costs. Mulching gardens with soft mulch saves potable water, reduces costs and prevents leaching of nutrients from the soil.

Behavioural change holds the opportunity to reduce water use by as much, if not more, than technical solutions. The first step is to educate the entire school community. The ACT Sustainable Schools Water Best Practice Guide can assist with this task which students find easy, fun and enjoyable.

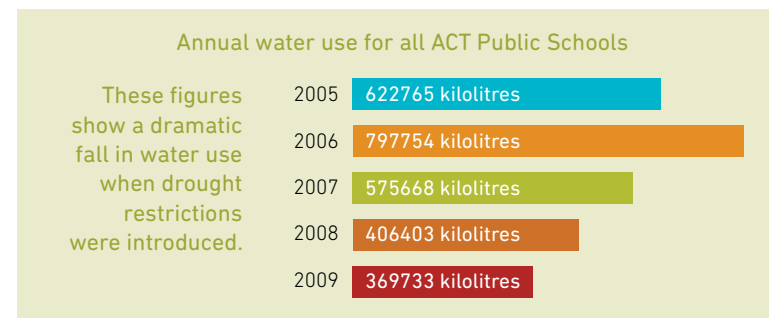
The Best Practice Guides available for Water, Waste, Energy, Biodiversity, Curriculum and Establishing and Maintaining an Environment Centre, assist with education and awareness by providing the steps necessary to achieve behavioural change in school communities. These guides can be obtained from the ACT Sustainable Schools team.

The Best Practice Guides encourage life-long learning and teaches students about long term decision making. Teachers of today have the opportunity to ensure new generations are equipped with the knowledge to deal with climate change from an early age.

Awareness

Schools can participate in National Water Week events which take place in October each year. National Water Week is an annual awareness week that aims to raise public awareness and improve understanding of water issues in Australia. www.nationalwaterweek.org.au

The ACT Sustainable Schools team is available to provide support and advice. www.sustainableschools.act.gov.au



Waste

Reducing waste to landfill and increasing recycling of waste material has many benefits, for example:

- ▶ one tonne of recycled paper and cardboard saves 13 trees and 2.5 barrels of oil
- ▶ each aluminium can recycled saves enough electricity to run a TV for 3 hours
- ▶ every 10 tonnes of recyclable materials recovered is equivalent to taking 4 cars off the road permanently.

Additionally, implementing waste minimisation processes can reduce the waste to landfill by 50-75%, saving at least 40-50% of costs for waste to landfill services.

How your school can make a difference

There are several goals that schools can aim to achieve with waste minimisation practices. These include reducing the:

- ▶ amount of waste going to landfill
- ▶ amount of litter being produced
- ▶ cost to schools for waste and litter management.

An ecological footprint is a method for measuring the sustainability of resource use and pollution of populations, including, for example, individual households and school communities.

With regard to waste, energy, water and biodiversity, reducing the ecological footprint of a school is a community wide approach. Therefore, schools should encourage all members of their school community to adopt an active role in planning and implementing strategies to minimise waste and litter production. Schools have the responsibility and the opportunity to be a beacon for their local community on socially responsible waste minimisation practices.



Waste minimisation can be challenging. The existing structure of the building may not allow for easy recycling systems and risk unsafe Occupational Health and Safety practices. Gaining commitment from the entire school community can be a daunting and time consuming task.

The responsibility for minimising waste rests with every member of the school community. Teachers and students will be responsible for the new system, but every single person within the school must be involved in managing and maintaining it.

The first step is raising awareness. Every single person in the school community needs to be aware of waste minimisation goals and know how to contribute towards achieving these goals. Promotion methods for raising awareness include through newsletters and information sessions at Parents and Citizens meetings, assembly announcements, signs and posters and stalls at the school fete.

Awareness

Schools can participate in Clean Up Australia Day which is held in March every year and National Recycling Week which takes place in November every year. Both these annual events aim to raise awareness and improve understanding of waste issues in Australia.

www.cleanupaustaliaday.org.au
www.recyclingweek.planetark.org

The ACT Sustainable Schools team is available to provide support and advice.
www.sustainableschools.act.gov.au



What would a sustainable school look like?



Energy

In 2008 ACT public schools spent around \$6 million a year in energy (gas and electricity) and were responsible for over 27,600 tonnes of carbon dioxide emissions (*Green Schools*). These emissions are contributing to the rising temperatures associated with the greenhouse effect and climate change. To help combat and adapt to climate change, schools can reduce their energy use which will have the added benefit of reducing costs.

How your school can make a difference

The Education and Training Directorate (The Directorate) can assist with energy audits, to establish baseline energy performance data and identify recommendations to improve the efficiency of each school.

Recommendations focus on the behaviour of staff and students in reducing energy consumption; supported by the ACT Sustainable Schools program and staff, as well as on infrastructure and how the school and the Directorate can improve building performance.

Reducing energy use requires commitment from the entire school community. The energy audit report contains site specific recommendations on how to reduce electricity and gas use. When implementing these recommendations the biggest challenge most schools face is making the most of energy efficient practices and technologies within what is possibly a less than efficient building.

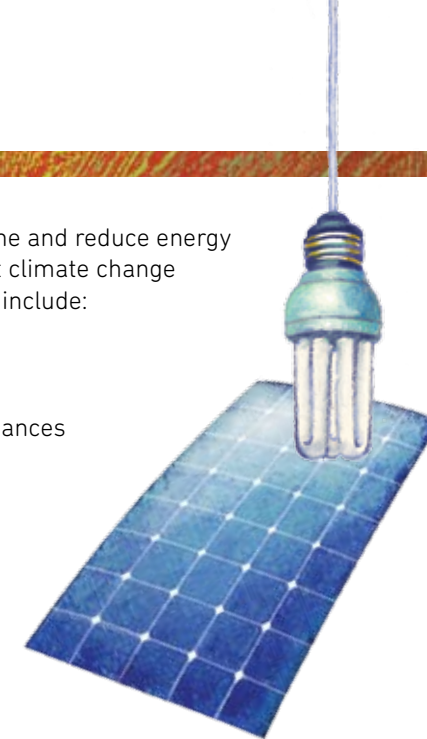
However, working within a less than efficient building can have advantages, as any changes made can have a more noticeable impact. For example, adding shading to western facing windows can noticeably increase the comfort in those rooms, reducing reliance on power hungry air conditioning systems, particularly on hot summer days.

Reductions in energy use of up to 45 percent can be achieved through implementing the Energy Best Practice Guide.



Technological approaches aim to define and reduce energy consumption and therefore can assist climate change abatement and adaptation. Examples include:

- ▶ energy efficient light globes
- ▶ motion sensors to control lighting
- ▶ automatic shut off timers for appliances
- ▶ automatic door closers
- ▶ roof insulation
- ▶ air locks at high use entry/exit doors
- ▶ high efficiency boilers for central heating
- ▶ reversible ceiling fans
- ▶ solar power generation.



The energy audit and the audit report, provided to all schools by the Directorate will provide information to support and trigger the application process for funding from the Australian Government under the National Solar Schools Program (NSSP). Schools will be able to access up to \$25,000 from the NSSP for the installation of photovoltaic (solar) panels. The Directorate will combine the NSSP funding with funds under the ACT Solar School Program to install up to a 10kW photovoltaic system on each school.

Awareness

Earth Hour is an annual event held in March in which all schools can participate so as to enhance student understanding of the impact of energy use on the environment. www.earthhour.org.au

The ACT Sustainable Schools team is available to provide support and advice. www.sustainableschools.act.gov.au

Transport

Weathering the Change reports that in 2005 motor vehicles contributed 23.5% of Canberra's greenhouse gas emissions.

How your school can make a difference

To reduce these emissions, the school community should aim to maximise the use of smarter travel choices such as walking, cycling and public transport. By replacing car travel wherever possible and using active alternatives, such as walking and cycling there are multiple benefits for health, the environment and the amenity of the local neighbourhood.

Awareness

The Health Promotion Branch is available to provide support and advice. Telephone (02) 6207 9527.



Biodiversity

Biodiversity, the degree of variation of life forms in a given area, can be used to measure the health of ecosystems from a global scale to a local, individual school ground sized scale.

In school grounds, the uninterrupted nature of the environment can be easily demonstrated to students. For example, litter produced on the playground does not remain on the playground. The wind and rain collect the litter and distribute it throughout the community. Developing biodiversity within the school landscape will have a similar continuous impact, allowing the improvements within the school grounds to be felt and witnessed by the wider community.

How your school can make a difference

Improving the environment within the school grounds through efficient landscape design has many benefits which can include:

- ▶ reducing both indoor and outdoor water and energy consumption
- ▶ easier maintenance of school grounds when plants with similar requirements, such as sunlight, shade and water, are grouped together
- ▶ providing wind breaks and shade
- ▶ improving both the look and feel of the school and its outdoor environment.

When creating diversity within the school landscape several issues can be encountered. Simply gathering the information and knowing how to design school grounds to reduce water and energy consumption, improve student behaviour and the aesthetics of the school is half the battle.

Involving students within the process is an excellent way to establish a shared vision and a sense of ownership among the entire school community.

Awareness

The ACT Sustainable Schools team is available to provide support and advice. www.sustainableschools.act.gov.au

Food

Food is the average household's major contribution to climate change, and is responsible for around 28% of our greenhouse gas emissions (*Consuming Australia*). Food choices and the way food is produced impacts on the ecological footprint of schools and the sustainability of the ACT's food supply.

Australians throw away around 3 million tonnes of food or \$5.2 billion a year (*What a Waste: An Analysis of Household Expenditure on Food*) representing approximately 136 kilograms per person per year. Fruit and vegetables form the basis of a sustainable diet. However, fruit and vegetables are the most likely food items to be thrown in the bin.

Food is part of life at school, whether it is being eaten in breakfast programs, recess, lunch, after school programs and special events, or used for fundraising activities, grown in school gardens or prepared in school kitchens. As a common resource, there are many opportunities to increase the sustainability of a school's food supply and improve the health of the school community.

How your school can make a difference

Schools aim to reach the following goals when trying to improve the sustainability of the lifestyles of the entire school community:

- ▶ reducing the ecological footprint of food consumed, sold, grown and prepared at school
- ▶ contributing to a sustainable, healthy and secure food supply for the ACT
- ▶ minimising food and packaging waste.

In a global context of climate change, population growth, increasing food demand and rising food prices, Australia faces the challenge of ensuring food security. Schools can teach students to meet this challenge by encouraging students and staff to not bring more food to school than they are likely to eat, and to eat what they bring.

The ecological footprint of food relates to the amount of water, land and energy required to produce and transport the food and the greenhouse gas emissions released. Schools and school canteens can reduce the ecological footprint of food consumed through encouraging purchasing of food with less processing and packaging, consumption of local and seasonal produce to decrease food miles and sourcing seafood from sustainable sources.

ACT landfill is scheduled to be completely full between 2015 and 2018. To combat this, the school community can compost food scraps and other organic material rather than send organic waste to landfill, refill drink bottles instead of buying bottled water or sweet drinks and pack lunches in reusable rather than disposable packaging.

A practical way in which schools can address these issues is by teaching students to grow their own food through school vegetable gardens. School vegetable gardens allow students to develop transferrable skills which will enable students to be less reliant on purchasing food from external suppliers, increase confidence in eating fresh produce and provide an option to reduce the ecological footprint of the food consumed on school grounds.

The Australian Dietary Guidelines for Children and Adolescents can provide guidance to teachers educating students about healthy and sustainable eating. Through increasing the knowledge of staff and students about sustainable eating, schools can create an opportunity for this awareness and knowledge to be transferred to the wider community.

Awareness

The Health Directorate can provide advice on healthy, sustainable diets. The Senior Public Health Nutritionist can be contacted on (02) 6207 2499.



Curriculum

Give a man a fish and you feed him for a day. Teach a man to fish and you feed him for a lifetime. Chinese Proverb

Curriculum describes the learning that is planned, guided and implemented by the school. To meet changing community expectations and remain relevant, curriculum is dynamic and responds to community expectations. Aiming to be relevant to the lives of students and the contemporary issues they face (2008 Melbourne Declaration), the Australian Curriculum has embraced sustainability as one of its three cross-curricular priorities.

Sustainability addresses the fundamental relationship of humanity to the world's natural resources. Sustainability can be seen as an attitude which is formed by personal experiences, family attitudes and community values. Education has been shown to be a powerful transformative tool, and it is the purpose of education to use curriculum as the basis from which sustainability issues are addressed within schools. Lasting behavioural change and the long-term adoption of sustainable practices can be supported, extended and enriched by co-curricular activities.

The *Australian Curriculum* includes sustainability and provides many opportunities for young people to develop an appreciation of the need for more sustainable patterns of living; and to build capacity for thinking, valuing and acting to create a more sustainable future.

How your school can make a difference

Schools can access numerous courses and resources, or visit a variety of external providers to incorporate the sustainability priority in their classroom practices. These are listed from page 21.

Awareness

The ETD Curriculum Support Section presents regular professional learning workshops to help teachers include the Australian Curriculum sustainability priority in their work, and is always available to provide support and advice. The Curriculum Officer can be contacted on (02) 6205 9346.

Curriculum Resources

ACT Sustainable Schools Initiative

Ten week programs on water, waste, energy, biodiversity and climate change are available online. The resources incorporate local information and supporting resources are suitable for students K-10. Visit www.sustainableschools.act.gov.au

Cotter Dam Education Kit

Curriculum resources produced by ACTEW are available online. Units cover Sustaining water for life: protecting the environment; Securing water for life: engineering and water supply; and Saving water for life: people and place, and are suitable for students K-10. Visit www.actew.com.au/education

CSIRO CarbonKids

Educational resources for schools committed to tackling climate change are available online. The range of ideas and activities are suitable for the early, primary and middle years of schooling. Visit www.csiro.au

Greening Australia

As a Registered Training Organisation, Greening Australia delivers nationally accredited vocational training in Conservation and Land Management-related areas, suitable for college students. Visit www.greeningaustralia.org.au

Pest Tales

An up to date resource produced by the University of Canberra's Institute for Applied Ecology. The resource incorporates use of ICT and highlights pest animal species in Australia, their impact and current ways of managing the damage they inflict on the environment, economy and people, and is suitable for primary students. Visit www.pestales.org.au

STELR (Science and Technology Education Leveraging Relevance)

Australian Academy of Technological Sciences and Engineering's science education program on renewable energy, involving the 'enabling sciences' and mathematics. The course materials incorporate practical applications, demonstrations and student-designed investigations, and are suitable for Year 9 students. Visit www.stelr.org.au

Excursion Sites

ACT Public Schools

State of the art sustainable infrastructure can be seen at many ACT public schools. Gold Creek School showcases a registered 6 Green Star Design Rated project, while Gungahlin College and Namadgi School are registered 5 Green Star Design Rated projects. Additionally, environmental science centres are located at Harrison Secondary School and Namadgi School. Telephone each school, contact details are available from the Directorate web site www.det.act.gov.au

Australian National Botanic Gardens

Discover Australia's rich natural and cultural heritage by visiting the 40 hectare outdoor living classroom to increase understanding of the role biodiversity plays in sustaining life on Earth. Workshops can be tailored to needs. Suitable for students of all ages. Telephone (02) 6250 9502 or visit www.anbg.gov.au

ACT Science Education Centre, Discovery Centre, ACTON

Innovative and creative science programs for visiting classes. Little Animals in a Big World (for primary students), and Electricity & Magnetism (for middle years students), are two 90 minute hands-on workshops that can be matched to the sustainability priority. Telephone (02) 6246 5296 or visit www.csiro.au

Birrigai at Tidbinbilla

Birrigai offers outdoor educational programs at a variety of sites within the ACT, including Paddy's River and Jerrabomberra Wetlands. Suitable for students of all ages. Telephone (02) 6205 6748 or visit www.birrigai.act.edu.au

Materials Recovery Facility

Tours of the Materials Recovery Facility (MRF) and the Resource Management Centre; including landfill (RMC) in Hume are a free, fun and educational presentation. Learn how the ACT's two-bin kerbside system works and what recycling or reuse options there are for a range of items that cannot go in these bins. Suitable for ages 5 and up. Telephone (02) 6207 7008 or visit www.tams.act.gov.au

National Museum Australia (NMA)

Every object tells a story; and the dynamic, curriculum-linked programs bring these stories to life. Four themes are covered by NMA education programs for visiting classes, including Australian environment. Suitable for students from pre-school to tertiary. Telephone (02) 6208 5345 or visit www.nma.gov.au

National Zoo & Aquarium

Be inspired and encouraged to assist in the creation of a more balanced and positive future between humans and the natural world. Discovery learning sessions provide enriching, interactive and "hands-on" experiences for students of all ages. Telephone (02) 6287 8487 or visit www.nationalzoo.com.au





Internet Resources

ACT Otherwise www.actotherwise.org

ACT Sustainable Schools Initiative www.sustainableschools.act.gov.au

ACT Science Education Centre www.csiro.au

Australian Curriculum www.australiancurriculum.edu.au

Australian National Botanic Gardens www.anbg.gov.au

Birrigai Outdoor Education www.birrigai.act.edu.au

Clean Up Australia Day www.cleanupaustraliaday.org.au

Conservation Volunteers Australia www.conservationvolunteers.com.au

Cotter Dam Education Kit www.actew.com.au/education

CSIRO CarbonKids www.csiro.au

Education and Training Directorate www.det.act.gov.au

Environment and Sustainable Development Directorate
www.environment.act.gov.au

Earth Hour www.earthhour.org.au

Flora for Fauna www.floraforfauna.com.au

Food Wise www.foodwise.com.au

Greening Australia www.greeningaustralia.org.au

Materials Recovery Facility www.tams.act.gov.au

National Museum Australia (NMA) www.nma.gov.au

National Recycling Week www.recyclingweek.planetark.org

National Water Week www.nationalwaterweek.org.au

National Zoo & Aquarium www.nationalzoo.com.au

Office of the Commissioner for Sustainability and the Environment
www.environmentcommissioner.act.gov.au

Pest Tales www.pestales.org.au

SEE-Change www.see-change.org.au

Science and Technology Education Leveraging Relevance (STELR) www.stelr.org.au

Think Water, Act Water www.thinkwater.act.gov.au

Travel Smart www.travelsmart.gov.au/schools