

Tips for Creating a Sustainable Garden



Monday 25—Sunday 31 August 2008

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1. Introduction

In 2008, Keep Australia Beautiful Week runs from Monday 25 to Sunday 31 August. During this time schools are encouraged to participate in the Score Points for the Environment Challenge. Points are awarded for undertaking a range of environmentally positive actions that help reduce greenhouse gas emissions and our use of natural resources.

In conjunction with this challenge, Scholastic Book Clubs, together with Keep Australia Beautiful, is running a Score Points for the Environment Competition for primary school teachers and their students, nationally. To enter, each participating class is asked to design a sustainable garden for their school. Prizes include books, water conservation tools, native plants and a visit from celebrity gardener Don Burke.

In July, an information pack is being sent to primary school teachers nationally who participate in Scholastic Book Clubs. If you do not currently participate in Book Club, you can call Scholastic on 1800 021 233. For further information, or to log your sustainable garden activity, visit

www.keeppaustraliabeautiful.org.au

Definitions

- A **sustainable garden** is self-functioning, relies on minimal additional resources and avoids adverse effects on the natural environment.
- A **school garden** involves children.
- A **community garden** is on school grounds but does not involve children.

2. Why create a sustainable garden at your school?

Having fun supports learning. Creating a sustainable garden at school will not only provide students with a fun and interactive activity, but will also help them enjoy the many benefits of gardening. They can contribute their ideas and skills to the design of the garden, get involved in its creation and planting, and take on responsibility for the garden's ongoing care and maintenance.

Students will learn about:

- the environmental impact of gardens
- saving water
- recycling
- greenhouse gas emissions
- where food comes from
- healthy foods and nutrition

Gardening experiences reinforce classroom teaching and provide opportunities to integrate curriculum across a range of subject areas. Students will gain a sense of pride and ownership in the garden, which can in turn discourage vandalism.

3. Some environmental benefits of a sustainable garden

- Trees and other plants help reduce the greenhouse effect and slow the effects of global warming.
- Plants soak up carbon dioxide and exhale oxygen and improve water quality by acting as a filter. Plants also enrich the soil by converting nitrogen into nitrates.
- Native plants and sustainable gardening practices conserve water and energy.
- Native trees, plants and flowers help support local native wildlife by providing food and shelter.
- Vegetable gardens provide food.
- Using non-toxic pest control is better for the environment and human health than conventional pesticides and herbicides. It also helps reduce harmful chemicals entering the waterways.
- A garden compost heap or worm farm will reduce the amount of 'green' waste being sent to landfill by turning it into nutritious plant food. (Up to 50% of what is thrown away in household rubbish bins can be composted.)
- Installing rainwater tanks or using a more efficient drip irrigation system will help conserve water.

4. Getting started – design tips

Aims

The main aim of your sustainable garden should be to design it in a way that maximises opportunities for biodiversity at every level. This includes:

- attracting wildlife
- planting native plants that require minimal watering
- maintaining complex ecosystems
- companion planting
- considering the health of the soil
- being aware of the environmental impact of your garden



Site Analysis

A careful site analysis will help you design your new garden; you will need to note anything that could have an impact on the garden's success. Ensure that the following issues are addressed and considered in your plans.

- Where's north? When designing a garden, the movement of the sun needs to be taken into consideration so that sunny and shaded areas can be identified. These are often different from summer to winter.
- Take into account the full width and height a tree or plants will grow to, and what areas they will or will not shade as they grow. In particular, make sure that potentially tall trees aren't planted under overhead power lines.
- Note the size and position of trees and other plants that won't be removed.
- Measure and include any existing paths that are staying on your plan.
- Design a garden that minimises the need for the use of potable water. This may be achieved through water-wise plant choices, mulches, watering systems that reduce evaporation and, for the water required, alternative water sources, such as collected rainwater or greywater.
- Reduce energy use in your garden. For example, less lawn means less need for petrol-run lawn mowers; consider solar powered alternatives for outdoor lighting.
- Does the garden maximise the opportunity for the growth of produce and other useful materials? This can encourage students to eat freshly-grown produce and encourages them to consider more than the ornamental value of gardens.
- Does the garden design and layout minimise the risk of weeds, chemicals or seeds moving into native habitats?

Site mapping

Take a note of anything that may help you with your garden plan and include these points with your measurements. Map the site, being sure to include all measurements and dimensions. When plotting the position of elements in the garden, reference existing permanent structures such as fences and buildings, so that measurements can be taken at right angles from them. This will ensure that positions on your plan are accurate.

5. Key Considerations

Plants

- When purchasing a plant, consider its suitability for the garden. Decide whether you will select indigenous, native or exotic plants, or a mix of all three.
- Check with your local council or garden centre to see what plants may be considered to be a weed in your local area, or pose a problem with their seeds.
- Ensure that you check the composition of soil and choose plants accordingly.
- Choose plants that will require little watering in addition to rainfall. Also consider mulch and ground covers that will help reduce water loss.
- Avoid plants that may be poisonous or allergy-causing and pose a risk to children, pets and native wildlife.



Water conservation

- Install a well-designed water-efficient watering system; such systems can include drip systems, tap timers and micro-irrigation systems.
- Use soil moisture sensors to help you recognise when your garden is thirsty.
- Group plants with similar watering needs in your garden.
- Choose water-efficient native plants over thirsty exotic plants.
- Installing a rainwater tank and using the collected water on the garden can reduce your mains water consumption by 25%.
- Greywater is also suitable for re-use on the garden. Greywater can be collected at school by putting a bucket or empty ice-cream container under drinking fountains and emptying it in the garden when full.

Recycle organic waste

- There is a range of 'green waste' (food and garden materials) that can be composted or mulched and used in the garden. This puts nutrients back into the soil and helps the environment by reducing the amount of waste being sent to landfill.
- Creating compost in your school garden is a great way to recycle students' food scraps into plant food for the school garden. Note that food and garden waste takes a while to break down. It can be three months or so before the compost is 'mature' and ready to use. Set up a series of 2 to 4 compost bins – one can be in active use while previously filled bins are maturing. Worm farms can also be used in schools. Worms in both worm farms and compost bins can easily munch through copious amounts of organic waste.

6. Further resources and support

- Ha, T. 2007, *Greeniology: How to live well, be green and make a difference*, Melbourne University Press, Melbourne.
- Ha, T. 2007, *The Green Garden: How to live well, be green and make a difference*, Melbourne University Press, Melbourne
- Tanya Ha's book *The Green Garden* provides more details and practical information on composting, building a worm farm, greywater use in the garden and environmentally sensitive pest control.

www.sgaonline.org.au – visit the info pages for detailed design advice and planning

www.savewater.com.au – great for water saving tips and plant selector advice

www.edibleschoolyard.org – for inspiration and case studies for student activities in the garden



7. Vocabulary & terminology

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| • Biodiversity | • Global warming | • Micro-irrigation | • Ornamental |
| • Carbon dioxide | • Greenhouse effect | • Mulch | • Oxygen |
| • Chemicals | • Greenhouse gas emissions | • Native plants | • Pesticides |
| • Companion planting | • Greywater | • Native wildlife | • Potable water |
| • Compost | • Habitats | • Nitrogen | • Recycling |
| • Drip irrigation | • Herbicides | • Nitrates | • Tap timers |
| • Ecosystems | • Indigenous plants | • Non-toxic pest control | |
| • Exotic plants | • Landfill | • Organic waste | |

Information compiled by Keep Australia Beautiful National Association 2008.