



Up close and personal with an earthworm

Worm farms: a wiggly way to introduce sustainable practice

BY KIRI COMBI

This article is the first in a six-part series that will look at the role of early childhood settings in promoting sustainability in education.

The philosophy of 'education for sustainability' refers to the role of educators in advocating and demonstrating sustainable practice to their children, to increase the knowledge of future generations.

The practice of disseminating sustainability information through early childhood settings was shown as essential in a 2002 UNESCO report. The 'Education for Sustainability' study reviewed the impact of education in promoting sustainability across a 10-year period. It found that early childhood education could facilitate sustainable practice, because it is the foundation for lifelong learning.

Moreover, the study found that early childhood settings act as a juncture where a large cross-section of the community converges. If we look at the number of children enrolled in childcare across the country, and the diverse nature of their backgrounds, early childhood settings seem perfectly placed to promote and perpetuate new types of education that should be available and accessible to all, especially sustainable practice.

The UNESCO report identified two major stumbling blocks when implementing education for sustainability in early childhood settings: educators' perceptions

that sustainable development is depressing and therefore inappropriate for children; and that, sustainability is too large an issue to be 'dumped' on young children.

Nelson Mandela famously said, 'Education is the most powerful weapon which you can use to change the world'. With this in mind, I established EcoPreschools Seaforth and EcoPreschools Balgowlah, in 2003 and 2007, respectively. As I experimented with integrating sustainable practices in both centres, I noticed the challenges identified by UNESCO. There were not many early childhood educators who were knowledgeable in the field of sustainable practice. I had to educate my staff in this new way of thinking. The educators were receptive to these new skills, and I found the children were excited by them. The community welcomed sustainable practice, and it



Feeding the worms



became the main point of difference in marketing EcoPreschools to the community.

Sustainable practice can be introduced into the curriculum in small steps. Setting up a worm farm is a small but satisfying measure children can partake in. You will need three trays, 1000 live worms, a bedding block, a worm blanket, two cups of food scraps, a watering can, a coconut husk, already softened in water, gardening gloves and less than one square metre of space to install it.

The worms live, breed and eat in the top tray, also known as the 'bedding' tray. This is where you place the food scraps. The worms eat food scraps and their waste product falls into the middle tray, called the 'castings' tray. This tray can be emptied every few months and the castings can be used to fertilise the soil in the garden. The bottom tray is where the worm juice collects and this can be used as a liquid fertiliser.

When setting up the worm farm, take the softened coconut husk and spread it evenly over the top tray. This is the worms' bedding. Place worms and a couple of cups of food scraps over the top. Cover with a worm blanket, such as a hessian bag or old towel and place the worm farm lid on top to close and secure the worms.

These tiny recyclers will help to downsize your centre's rubbish and enrich your garden soil. Worms eat anything organic, even an old shirt, leather belt or paper. But they don't really like onions! Be careful of feeding them too much meat, because it can attract flies and eventually maggots.

Children can be involved in every part of the set-up. This helps them to grasp an understanding of the worm farm cycle. Once the farm has been established, jobs can be rotated among the children to collect food scraps and feed the worms three times a week. The worms need water twice a week. Worm juice can be collected after watering the farm. It needs to be diluted at a ratio of 1:10 for use as fertiliser on the vegetable patch.

Since my time operating the EcoPreschool centres, I have moved on to creating kits for childcare centres to help others introduce sustainable practice. The resulting body of works culminated in my Backyard in a Box series, consisting of six modules, each containing an instructional video, teacher training manual and resource kit. There are modules on establishing a worm farm, composting, kitchen gardening, resource recycling, and animal husbandry (guinea pigs and chickens). The modules comply with the learning outcomes of the Early Years Learning Framework.

The worm farm module contributes to the learning outcome where children connect and contribute to their world. The worm farm helps children to understand why earthworms are sometimes referred as the 'lungs of the earth'. Teaching children about worm farms introduces them to terms such as 'castings' and 'worm juice'. Children familiarise themselves with the worm farm construction through the three trays with three different processes, all of equal importance. Educators facilitate the learning of waste discrimination, the specific diet of an earthworm, and what conditions are required to ensure healthy breeding.

Childcare settings already operate like small communities, where educators often job-share or are required to work together to achieve common goals. Education for sustainability also requires this same community-minded approach in the children. A roster system to care for the worms ensures a shared responsibility among the centre's children.

Introducing sustainable practice through efforts like worm farms demonstrates to children that their own behaviour will contribute to their health and wellbeing as well as the wellbeing of others. They also understand the connection between their own behaviours and the benefits that follow thereafter, all contributing to an understanding of how they are connected with and can contribute to their world. This also creates a sense of agency, where children are able to see the results of their action – or inaction, as it is in some cases.

The purpose of EcoPreschools' Backyard in a Box is to inspire and prepare today's children for lifestyles that meet the needs of the present without compromising the ability of future generations to meet their own needs. ③

For more information about Backyard in a Box, email kiri@ecopreschools.com.au or visit www.ecopreschools.com.au. All images courtesy of Kiri Combi.