

Cool(ing) stuff

The CSIRO is helping schools teach the science behind climate change. **Cynthia Karena** reports.

Incorporating environmental practices into the curriculum was a natural extension for Australind Senior High School in Western Australia.

"We had already done a significant amount of work around sustainability," says Year 8 teacher Kathryn Pope. "We created an earth garden [growing organic food to use in cooking] and started rehabilitating a wetlands area."

But the school still decided to take part in the Commonwealth Scientific and Industrial Research Organisation's pilot CarbonKids program because it provided 'groundwork' towards its goal of integrating sustainability learning across its Year 8 curriculum.

CarbonKids, which is being developed by CSIRO Education and currently involves 26 schools across Australia, encourages schools to commit to tackling climate change by combining the latest science with sustainability education.

"The CSIRO provides a variety of activities that fit into the curriculum," says Pope. "For example, posters defining environmental terms in child-friendly language, a science information sheet, internet links and media articles. The CSIRO also gives us child-friendly science articles. It's great to have access to what the scientists are saying.

"A lot of the information is on the internet but we don't always know if it's true or not. Some

The students research what scientists are saying about the topics and how that compares with the results of their experiments.

students have found information in blogs but don't realise it's someone's opinion and not fact. We trust the information the CSIRO gives us because it's backed up with science."



➔ Briefly

- The CSIRO's CarbonKids program gives teachers a framework for incorporating environmental activities into the curriculum.
- Students create an action plan for reducing their school's carbon footprint.
- The program includes engaging with CSIRO scientists.



CarbonKids currently involves 26 schools across Australia, including Bunbury Primary School in WA (pictured below).



Your say



Angelique Morin

Year 5 teacher, Bunbury Primary School, WA.

The first step in each action plan was to measure the school's consumption of a resource. By measuring again at the end of the school year, students can gauge the success of their campaign. Managing these initiatives has become part of classroom routine with students incorporating their responsibilities into their daily school experience.

Ultimately, the program has ignited their active citizenship and responsibility for creating a change they wish to see.

The Australind students' own scientific investigations into climate change include measuring the rate ice melts at different temperatures and investigating how different levels of water affect the growth of wheat. The students research what scientists are saying about the topics and how that compares with the results of their experiments.

In philosophy classes, students discuss topics such as the responsibilities humans have towards the natural world and what makes humans different from other mammals. They have also discussed the Kyoto agreement for reducing greenhouse gases and what it means.

Starting point

"The CarbonKids program gives us ideas and activities we can extend or modify," says Pope. "They are a great starting point. If you know nothing about climate change, there's enough here to get started."



► Students in the program can engage with CSIRO scientists and learn from them, says CarbonKids coordinator Angela Colliver.

“Some schools have partnered with a scientist via the CSIRO Scientists in Schools program and others have access to the latest climate change science by hearing from scientists via podcasts available on the CSIRO website.”

CSIRO Education Centres in each state and territory have developed an associated teaching unit for CarbonKids, and Colliver visits schools to explain environmental terms and concepts.

“We collaborate with teachers to help them fit the CarbonKids program with their curriculum and into their lesson plans. For example, two classes have integrated carbon chemistry into an outer space unit and looked at different carbon levels on planets and how this affects climate.”

After Colliver visited Bunbury Primary School in Western Australia, the students came up with a list of six ideas to help the school reduce its carbon footprint, says Year 5 teacher Angelique Morin. Six groups in the class each took responsibility for an initiative: recycling plastics and milk cartons sold at the canteen; lunchbox audits of packaging; ‘walking buses’ to school; turning off computers at the end of the day; turning off lights during recess and lunchtimes, and limiting classroom lighting; and developing a native water-wise garden.

Mathematics classes have measured electricity consumption, weighed rubbish, surveyed the number of cars dropping students off before school, worked with equivalent fractions when

“The teachers, students and parents feel empowered.”



Jennie Spenceley
Learning assistance support teacher
Rydalmere East Public School, NSW

surveying classrooms that have left their lights or computers on and measured the area and perimeter of garden spaces.

“Students have also written expositions that attempt to convince other students to change their behaviour in regard to reducing our carbon footprint,” says Morin.

Carbon Cops

Rydalmere East Public School, in NSW, saw CarbonKids as an opportunity to be more systematic in its sustainability activities.

“The students are not only concerned [about climate change], they are motivated to do something about the issue,” says learning assistance support teacher Jennie Spenceley. “We’ve increased tree plantings, especially to aid in passive cooling, and we’ve discussed why mulching is important. We have established a veggie garden and discussed why local food produce is important.”

“Year 3 has a worm farm and the whole school composts. Year 5/6 has a Carbon Cops team, which double-checks that everyone is turning off lights, air conditioners and taps.”



From top to bottom, sustainability activities at Rydalmere East: Carbon Cops, use of recycled lumber and establishing a vegetable garden.

The school has built an outdoor learning theatre out of 30,000 milk bottles recycled into plastic lumber. Now it’s using more plastic lumber to reduce soil erosion. The aim is to contain water and mulch areas for planting.

“The teachers, students and parents feel empowered that they can do something,” says Spenceley. “We take the positive angle that everything you do makes a difference, that one voice can create a chain reaction.” ●

Cynthia Karena is a freelance writer.