

Biodiversity Project with a Technological Twist

The Challenge

Our ability to care for our local environment requires us to know about the plants and animals that share their environment with us. This knowledge enables us to recognise changes as they occur over time and make judgements about whether the ecosystem is healthy or not.

The challenge for local Sydney primary and high school teachers is to engage students using innovative mobile technology solutions in the field to investigate local ecosystems with the aim of identifying the factors affecting the survival of organisms and biodiversity. To sustain this endeavour, the Macquarie ICT Innovations Centre's 'Local Ecostudy Project' (LEP) connects with agencies within the school and beyond into the local community.

The Solution

The Macquarie ICT Innovations Centre is a collaborative partnership between the NSW Department of Education and Training and Macquarie University. For the LEP they work with the Field of Mars Environmental Education Centre, Narrabeen Coastal Environment Centre and local councils. Cate Fredrickson and other teaching team members are very excited to be involved in this collaborative project.

This project is having an impact on participating schools by:

- building a community of schools with a shared environmental purpose
- connecting middle schools students through peer mentoring
- supporting the development of participant's ICT skills
- producing a shared online presentation
- allowing teachers to share professional dialogue, resources and expertise

Provided by the Macquarie ICT Innovations Centre, and distributed in Australia by Keepad Interactive, the Nova5000 Student learning and data Logging device enables the students to perform a range of scientific tests and analyses in their outdoor field trip environment as well as in the school laboratory or classroom. This device acts as a data logger, collecting environmental information such as

temperature, light variations and pH to create graphs, spreadsheets, word documents and sketches of their sample sites. They also use the Centre's digital cameras to record further information about the fauna and flora species they find. Students present their collaborative work on a shared wiki website.

Throughout this project, students are able to create artefacts of their learning that represent a range of disciplines and literacy. This interdisciplinary approach to inquiry-based learning includes studies in science (environmental science, biology, ecology); visual arts (drawing, digital photography, surrealism, photo image editing); English (writing, talking and listening, reading); mathematics (data, numeracy, measurement) and performing arts (music and drama).

This project will have an even deeper impact on our participant schools by: building a community of schools with a shared common purpose; connecting classrooms, their teachers and students with each other; sharing professional dialogue, resources and expertise as well as enhancing the ICT skills of all participants.

To complement the extensive range of on-board Student Learning functionality is an array of over 60 sensors available to purchase including; soil moisture, humidity, anemometer (wind speed/direction), turbidity, rain collector, pressure, magnetic field, flow rate, Geiger Muller.

Since 2008, almost 30 schools have participated in this project.

If you are interested in finding out more about the Local Ecostudy Project, visit the Macquarie ICT Innovations Centre website. <http://www.macict.edu.au/>

Keepad Interactive is an Industry Partner of Macquarie ICT Innovations Centre.

About Keepad Interactive

Based in Homebush New South Wales with offices worldwide, Keepad Interactive is the Australian and New Zealand distributor of the Fourier NOVA5000 data logger. Keepad's belief is that the pedagogy of learning will be elevated with the use of interactive technology as teaching practices become more student centred.

Keepad Interactive specialises in the provision of leading Interactive and Activity Based learning solutions, and also offers eBeam Interactive Whiteboards & Tablets, TurningPoint Student Response System, Epson Projectors & Visualisers, Wacom Interactive Pen Displays & Tablets, robotics and a range of educational software.

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