



enewsforschools

NUMBER 26 | JULY 2009



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High standards: Supporting the New Zealand Curriculum

Futureintech Ambassadors provide unique ways to meet achievement standards and objectives in maths, science, and technology.

“Very many thanks for the wonderful morning you spent with us. It was so beneficial and the kids really got a lot out of it. I felt you explained all those technical things so well and at the kids’ level.”

*Judy Mathews, Teacher, Havelock North Intermediate,
following a presentation about boat-building from
Futureintech Ambassador Ben Ellison*

A MAIN PRIORITY OF *The New Zealand Curriculum (2007)* is to challenge students of all abilities in all learning areas, and to connect their studies with the wider world. At each level, achievement standards and objectives are designed to promote excellence and place the subject in the context of themes relevant to today’s society. This is particularly important for Maths, Science, and Technology, which are crucial for the careers of tomorrow but can seem abstract and unrelated to the everyday issues we face.

A number of teachers have turned to Futureintech Ambassadors as their students work towards standards and objectives in their subject. Through presentations, experiments, and group projects, Ambassadors can support the in-depth learning experiences that bring out the best in students.

For instance, Technology teachers might use Achievement Standard 90676, which deals with the moral, ethical, and legal considerations of the field and explores technologists’ responsibilities to the wider community.

At Pakuranga College, structural engineer Dhirendra Singh provided an excellent example of his responsibility to the community during a visit to a Materials Technology class. He told the students about an incident during work overseas when a contractor tried to bribe him to let his workers on the building site wearing jandals instead of the required steel-toed boots.

Elmwood School has scheduled two Ambassadors to visit their Year 5 students for a maths activity that will cover the concept of scale. They’ll compare photographs, measure objects, and use computer software to explore ratios. This



Dhirendra Singh talks about ethics and morals during a visit to Pakuranga College’s Materials Technology class.

activity supports achievement objectives across a range of levels in geometry and measurement.

Rosalind Julian, a chemical engineer, led a Chemistry class at Hutt Valley High School in an experiment on corrosion during their unit on oxidation and reduction, which can go toward Achievement Standard 90311. She talked about the different ways that she tries to prevent and repair corrosion in structures around Wellington.

These are just a few of the ways Ambassadors can support the curriculum in schools. To find out more, contact the Futureintech Facilitator in your area – see page 6.

New brochure: A career in ICT

Futureintech's new brochure shows how ICT professionals are changing the world and creating the jobs of the future.



INFORMATION AND COMMUNICATIONS TECHNOLOGY is essential to almost every part of modern life, including government, education, industry, entertainment, and culture. Our latest brochure profiles eight professionals from cutting-edge New Zealand companies and shows how their work contributes to a growing global network of communication and creativity.

Whether it's web-based business solutions, 3D graphics and special effects, or online communities, the brochure emphasises the multidisciplinary nature of today's ICT industry. Each profile includes an education pathway, showing how a strong foundation in maths, science, and technology can lead to an exciting, successful career.

Along with technical ability, ICT professionals rely on innovation, communication and teamwork. Graham Dockrill, co-founder of hairyLemon, finds that a flexible, team-oriented workplace is an essential part of modern web development. "We have to work faster and better to get the same customer satisfaction," he says. "We work together, collaborate, and learn from each other."

Other examples in the brochure show that web technology has important benefits for industry and society. Entrepreneur Tim Norton combined his expertise in ICT, media, and business management to create **MadfromNewZealand.com**, where Kiwi businesses can promote themselves and collaborate with each other; and Potaua and Nikolasa Biasiny-Tule founded **TangataWhenua.com** as a resource for Maori communities around the world.

This field also offers a lot of opportunities for arts and entertainment. Technical director Tyrone McAuley from Sidhe Interactive, software developer Selena Dewar from TVNZ, and 3D artist Rachel Ryan from Animation Research help bring our imaginations to life through video games, television, and movies.

"We work with brand new technology, which is heaps of fun," says Selena. "There are so many creative media people in the building. We learn from each other and get lots of great ideas."

Our public infrastructure has a lot to gain from ICT as well. GIS engineer Reuben Williams uses geographic modelling to design road networks, walking networks, and public transportation in the city, and technical engineer Jangez Kahn works with telecommunications company Chorus to keep New Zealand's radio network up and running.

Our Facilitators will be distributing this brochure to schools in their respective regions; contact the one in your area to request copies (see Page X). You can also use our online order form at www.futureintech.org.nz/order-form.cfm.

Scholarships for technology, engineering, and science

It's never too early for secondary students to start thinking about scholarship opportunities. Visit the following websites for the latest information on funding for tertiary study in maths, science, and technology.

The IPENZ Foundation



The IPENZ Foundation is offering scholarships worth \$5,000 for secondary students who want to study engineering. These awards are designed to raise the profile of engineering amongst secondary school students and encourage school leavers into tertiary education. Students from Years 12 and 13 are eligible to apply. Applications for the 2010 scholarship close on 10 January.

www.foundation.org.nz/Scholarships.cfm

The Maintenance Engineering Society of New Zealand (MESNZ)



MESNZ is offering a scholarship worth up to \$5,000 to cover tuition fees. This is available to candidates interested in a career in maintenance engineering and who are commencing study towards a MESNZ/IPENZ accredited

engineering degree, diploma or certificate from any year level. The closing date for applications is 28 August.

www.mesnz.org.nz/scholarship

The Edna Waddell Undergraduate Scholarship for Women in Technology and Engineering

This scholarship encourages women to study engineering and technology at the undergraduate level. Each scholarship will be for one year, with a maximum value of \$5,000. Applications must be submitted by 1 October 2009.

www.massey.ac.nz/massey/fees/scholarship-bursary-award/other-scholarships/search-results/search-results_home.cfm?scholarship_id=797&hide_back=1&page=award_display

Frontiers of Science

The University of Otago awards its Frontiers of Science Scholarship to two high school students every year. Worth \$3,000 per year over four years, the scholarship goes toward one of the university's science degrees. This is available for students who achieve high marks in two NZ Scholarship science exams but do not receive a NZ Scholarship. Applications are due by 10 December.

www.sciences.otago.ac.nz/frontiers/index.html

Other scholarships

Universities and polytechnics, government organisations, and industries often have funding opportunities available for school-leavers. More information can be found at the "Money for Study" page on the Futureintech website, at www.futureintech.org.nz/scholarships.cfm.

Ambassador training

There have been a number of Ambassador training sessions around the country this month, providing some of our newest volunteers with some useful information about their role with Futureintech. Our Facilitators in Christchurch, Dunedin, and Wellington organised and hosted the events, answering questions and telling them what to expect.

We now have over 484 Ambassadors available to work in schools around the country. They can provide engaging personal stories about jobs in all kinds of maths-, science- and technology-related fields, as well as support for curriculum activities and careers events. Read the latest Ambassador profiles at the “People” page of our website, www.futureintech.org.nz/careers.cfm.



New Ambassadors learn the ropes at a training session in Wellington.

Support for careers events

Futureintech continues its support of careers events, including individual school expos and careers evenings, and larger events such as the Rotorua District Council Engineering Day and the Food Industry Big Day Out.

Facilitators supply students and teachers with brochures and other printed materials about different career paths in technology, engineering, and science, while Ambassadors are available to answer questions about their jobs. Facilitators can also help organise industry site visits for students.

If you have a careers event coming up, contact the Facilitator in your area to find out how we can help.



Four Futureintech Ambassadors participated in Hastings Intermediate's careers expo this month, including civil engineer Brett Menefy from Opus (pictured).

NZCER study

IPENZ has contracted the New Zealand Council for Educational Research (NZCER) to evaluate the impact of Ambassador visits and the different activities they conduct in the classroom.

Over the course of two school years, NZCER will conduct an evaluation of Ambassador activities in primary schools and a similar study in secondary schools. In each case, the study will be based on telephone interviews with 30 teachers in Ambassador-engaged schools, as well as in-depth case study visits to four of these schools.

We will report the results of this study next year.

About Futureintech

Funded by NZ Trade and Enterprise, Futureintech is an initiative of the Institution of Professional Engineers New Zealand (IPENZ). Established in 2003, Futureintech is a practical attempt to increase the number of young New Zealanders choosing careers in technology, engineering and science – crucial sectors for the infrastructure and social and economic growth of the country.

Futureintech Ambassadors

Futureintech Facilitators around New Zealand work to develop links between schools and local industries. Central to this work is the recruitment of Ambassadors – young people working in technology, engineering and science who are trained by Facilitators to volunteer in schools. Their contribution includes giving presentations, explaining their work, supporting projects, providing a real-world perspective and demonstrating the practical applications of the curriculum. There are currently 350 trained Ambassadors working with Futureintech, representing a wide variety of industries. Their support and that of their employers is greatly appreciated.

Futureintech partnerships

Futureintech maintains partnerships with over 200 companies, representing a diverse cross-section of New Zealand industry. Partners work with Futureintech in a variety of ways, from encouraging staff members to become Ambassadors to providing expert information for publications or promoting Futureintech to a wider audience. Futureintech's work would not be possible without their generosity and commitment.

Futureintech publications

Futureintech produces an ever-increasing range of print resources for teachers, students, careers advisors, caregivers and industry, all of which are available free of charge by request from head office.

Futureintech's website www.futureintech.org.nz is another key component of the initiative. It offers profiles of Ambassadors and their employers, a database of relevant tertiary courses and monthly regional news, and is regularly updated.

Futureintech's monthly newsletter **enews** is distributed in alternate months to schools and industries, and aims to ensure that all stakeholders are kept fully informed of Futureintech's activities and of the resources we provide.

Futureintech Facilitators

Futureintech's regional Facilitators promote and maintain relationships with schools and industry employers. This involves recruiting and training Ambassadors, advising teachers on how Futureintech can best support their programmes, arranging, planning and supervising Ambassador visits and distributing resource materials.

Facilitators are supported by Host Partners, who provide the office space which enables them to work remotely from the Wellington head office. Host partnerships ensure that Facilitators not only benefit from a collegial atmosphere but also have daily exposure to an industry-related workplace.

If you have a class that might benefit from contact with a Futureintech Ambassador, or to discuss other ways Futureintech may be able to help, please contact your local Facilitator to discuss how we can work together.



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