Melbourne North West Newsletter 2009/10

The “Science & Engineering Challenge” is an innovative outreach program designed to show students in years 9 and 10 that a career in science, engineering or technology can be a part of anyone’s future. Over the course of one day, 8 teams of 30+ students competitively engage in 8 fun filled activities designed to show students the fundamental principles of physics and mathematics ‘in operation’. The reward (to all students) is to complete the day with a feeling that “I could be a scientist, engineer or technologist – after all!”

The program was devised by the University of Newcastle, NSW in 2000, to address the alarming decline in numbers of secondary students choosing to go on to careers in these fields after secondary schooling. It has been widely recognised, receiving awards from scientific and engineering bodies, and has received over $1 million in funding support from the federal government’s Department of Innovation, Industry, Science & Research; Engineers Australia; Australian Constructors Association Limited and major industry sponsors to expand the program to all states.

The program is delivered across Australia via partnerships with the University of Newcastle. Victoria University has conducted challenges in North West Melbourne since 2004 and commenced our first regional Challenge in Wangaratta in 2008.

The Science & Engineering Challenge is the largest outreach program of its kind being conducted in Australia and has expanded to include Singapore. In 2009, approximately 22,000 secondary school students participated across Australia, with the best schools from all states going on to compete at the Grand Challenge in October!

Activities include, designing
- bridges using balsa wood, pins, adhesive tape, drinking straws and strings to carry a moving load increasing to several kilograms weight;
- a chair to support the stationary weight and absorb the energy of a ‘baby’ doll as it falls onto the chair;
- an electrical cabling network to supply power to a model city to ensure a reliable supply of power in the course of natural ‘events’ and power outages;
- propeller driven helium balloon support airships, then navigating these through an obstacle course in the minimum time; and many others.

Avoid disappointment by registering your interest early by completing the following and faxing it to Lyn Allis, Marketing & Community Liaison Officer, School of Engineering & Science on (03) 9919 4908; or phone (03) 9919 4193 or via email at Lyn.Allis@vu.edu.au.

Remember – only 8 schools a day can compete!

The dates for the 2010 Challenge are:

- Tuesday 20th July
- Wednesday 21st July
- Thursday 22nd July

Please indicate your preferred date, numbering from 1 – 3, as your first choice may not always be available depending upon demand.

SCHOOL NAME:

SCHOOL ADDRESS:

SCHOOL PHONE:   SCHOOL FAX:

TEACHER CONTACT:

TEACHER EMAIL:

Register now for the Victoria University Science & Engineering Challenge – 2010

Awards are presented to winning schools and are sponsored by Engineers Australia who support Victoria University’s involvement in the Science and Engineering Challenge.
Typical feedback from schools and students who have participated in the challenges include the following:

Werribee Secondary College – “On the way home the students were “buzzing” about what their various challenges had involved. Our students learnt valuable lessons on what it takes to be both scientists and engineers in the modern world. The ‘hands-on’ approach kept the students totally engaged, and the competitive spirit was palpable throughout the day, especially during the final bridge-building.”

St. Joseph’s College Melbourne – “The competition is a fantastic experience for our Year 9 and 10 students and enables them to work in cooperative teams to solve interesting scientific problems. The experiences are incredibly valuable as a learning experience to supplement our science and technology curriculum.”

Presentation College Windsor – “I was so impressed by the day. I cannot exaggerate how much the students have learnt and enjoyed themselves.”

Melbourne Girls’ College – “This is the second year that our students have participated and once again the positive and enthusiastic responses from the students have been a pleasure to see.”

Sunshine College – “Our students enjoyed the opportunity to participate in solving challenging, real-life problems using their maths and science knowledge. The Challenge gave them the opportunity to practice working cooperatively in small groups, using a hands on approach. This is a very valuable life skill.”

“As the students have discovered, you don’t need to be a rocket scientist to enjoy science and engineering”.

WINNING SCHOOLS IN 2009 AT THE VICTORIA UNIVERSITY CHALLENGE EVENT WERE:

Day 1  Caroline Chisholm Catholic Collega  Werribee Secondary College
Day 2  St. Joseph’s College  St. Bernard’s College
Day 3  Scotch College  Westbourne Grammar

Secondary schools wishing to participate in the Victoria University Challenge in 2010 should send in the preliminary registration form on the back page of this newsletter. We hope that the photos in this newsletter will inspire your school to “have a go” next year.

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Thank you to the following schools for being a part of our Science & Engineering Challenge 2009:

Gladstone Park Secondary College
Reservoir District Secondary College
Marcellin College
Werribee Secondary College
St. Catherine’s School
St. Joseph’s College
St. Bernard’s College
Gilmour College for Girls
Caroline Chisholm Catholic College
Scotch College
Bayside Secondary College

Westbourne Grammar
Sunshine College — North Campus
Sunshine College — West Campus
Melbourne Girls College
Footscray City College
Kilor Downs College
Brimbank College
Lowther Hall Anglican Grammar School
St. Albans Secondary College
Presentation College Windsor

“Astronomers have discovered signals coming to earth from a nearby star. These signals indicate there may be life in the galaxy containing the star. The “Dish” involves designing a working antenna to receive and interpret these signals in a search for extra-terrestrial life.

“Electracity” is the aim of connecting a power grid of cables from suppliers to consumers with the shortest total cable length and with the greatest reliability (in case of outages).

“Eco-habitech” is an activity where students design a house to resist the effects of global warming/droughts, temperature extremes, floods and high winds. The house must be ecologically “friendly” as its “carbon cost” will be calculated.

In “Electracity” student design a house to resist the effects of global warming/droughts, temperature extremes, floods and high winds. The house must be ecologically “friendly” as its “carbon cost” will be calculated.

“The ‘lost world’ sees students design a motor/propeller powered helium balloon suitable for traversing an obstacle course in the shortest possible time, to escape a hostile environment.

“World sailing” is the art of designing a sail for a yacht which will enable it to travel in a straight line as quickly as possible, under the effect of wind from one side. The design of the sail(s), the selection and use of ballast and the design of a rudder system are all part of the challenge.

“Hover-frenzy” requires the design of a hovercraft used to evacuate personnel from an Antarctic Research Station. The craft will need to cross the open sea and navigate between floating icebergs and will also need to be able to cross land before and afterward the sea. Your design will include the means to achieve lift as well as propulsion.

“Mission to Mars” requires students to design/construct a vehicle to traverse the surface of the planet Mars, whilst carrying a payload. The time taken to cross the surface and the size of the payload are variables that determine the “best” vehicle.

“Gold fever” is designing a model bridge to support a moving load representing a cart carrying gold bullion across a ravine. The weight (bullion) is increased until the bridge fails in the process.