Other programs for teachers and students:

Scientists in Schools

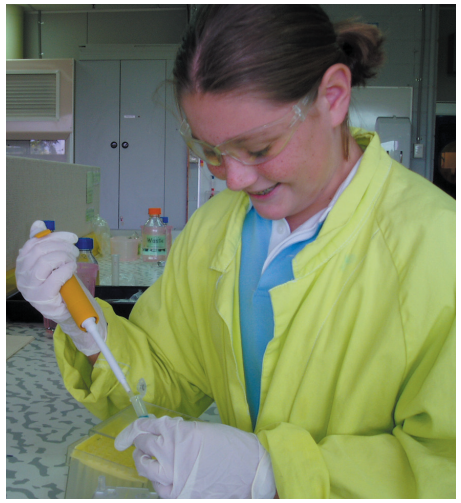
Scientists in Schools matches scientists and engineers with primary and secondary school teachers in ongoing partnerships. These are supported by resources, emails, phone calls and face-to-face events. Register for free online. **www.scientistsinschools.edu.au**

Mathematicians in Schools

Mathematicians in Schools matches mathematicians with primary and secondary school teachers in ongoing partnerships. These are supported by resources, emails, phone calls and face-to-face events. Register for free online. **www.mathematiciansinschools.edu.au**

Double Helix Science Club

Get your hands on our two kids' science magazines with free online teacher's guides. There are big savings available on bulk subscriptions and free membership available through the School Science Prize. The club also provides diverse scientific inspiration for students, including regular events and engaging holiday programs run by this centre. **www.csiro.au/helixschools & www.csiro.au/helixevents**



What do teachers think?

95% of teachers find programs relate well to the curriculum and are likely to have a lasting positive impact on students.

"Great links to real life and science careers switches kids on. Excellent hands-on activities."

"The hands-on aspect of your programs is the best way for students to engage and hence learn about science."

"FANTASTIC!! Totally engaged the children. Terrific experience—motivating and linked to our topic. Thank you!!"

CSIRO Education's nine regional centres see over 380,000 students and teachers annually and over five million have completed our programs.

Want more teaching resources?

FREE ACTIVITIES:
www.csiro.au/sciencemail & www.csiro.au/diy

AWARDS PROGRAMS:
www.scienceawards.org.au & www.csiro.au/crest

CSIRO SHOP (teacher's resources): www.csiroshop.com

CSIRO Education operates in every state and territory.

Bookings / Contact Us
Phone: 07 4753 8632
Fax: 07 4725 7888
Email: education.nqld@csiro.au
Web: www.csiro.au/EducationNQld
James Cook University,
Townsville, QLD 4811
(Building 054, opposite Engineering)

www.csiro.au

CSIRO

CSIRO Education North Queensland

Secondary school programs 2012

Travelling, curriculum-linked, hands-on programs for your students. Inspiring and educating young Australians.

A partnership with:

JCU James Cook University

Queensland Government

Robotics - NXT Generation

Yr 8-10 | 90 minutes

A robotics program designed to test the logical thinking and problem-solving skills of students. Using NXT robotics, students program their own robots to perform a series of challenges. Students will learn how to use various sensors and how to start their robots remotely.

Simple Machines

Yr 8 | 90 minutes

Students are introduced to the concepts of structures, forces, levers, gears and pulleys. The program includes hands-on explorative investigations using Lego™ kits and problem-solving activities.

Electronics

Yr 8-10 | 90 minutes

Students use novel wireless circuit boards to understand series and parallel circuits, resistors, capacitors, transistors and diodes. Students then build circuits with real-life applications including door minders, sirens, timer switches and bike flashers.

Eco Enigma

Yr 8-10 | 90 minutes

Students become a team of scientists asked to provide an environmental impact report to a community with environmental problems. They measure heavy metals in shellfish, analyse river silt, explore why fish stocks are declining and recommend an action plan.

Thinking Scientifically NEW!!

Yr 8-10 | 90 minutes

Students explore the concept of fair testing through the use of state of the art Vernier LabQuest data loggers. Using real world examples, students use probes to conduct experiments by measuring temperature, pH, conductivity and CO_2. They will determine the variables in their investigations.

Costs & general info

- SCHOOL YEAR SUITABILITY
- MINUTES PER SESSION
- PROGRAM CAN TRAVEL TO YOUR SCHOOL

Sessions are offered in-centre and Lab-on-Legs (travel to your school) with 30 students maximum per session. Unless noted, programs are available all year subject to bookings.

Prices GST free and valid 2012. Booking cancellation fees may apply for late cancellations.

In-Centre
$5.50 per student (minimum session fee $150),
except Jumping Jelly Genes $200 per session,
Industrial Chemistry $200 per session.

Lab on Legs (in your school)
Zone 1 (<30 km radius from NQSEC) $170 per session

Zone 2 (30-150 km from Townsville) $220 per session

Minimum 2 sessions of same program.

Zone 3 (>150 km from Townsville requiring overnight stay) $260 per session

Minimum tour days apply depending on distance. Minimum daily session fee $540 per presenter. Concurrent sessions can be run including sessions for primary students.

Telescope viewing available upon request from $120 per session.

Curriculum links: All our programs support the Australian Curriculum. For further details, please request our teacher information for individual programs.

TURN OVER FOR BOOKING AND CONTACT DETAILS

Forensics - A Cattle Duffing Scenario

Yr 8-12 | 90 minutes

When 50 suspect head of cattle are seized from a sales yard, the 'Stock Squad' launches a full scale investigation. Students work in small teams to examine and analyse evidence ranging from rifling marks, dental impressions, entomology specimens, blood, fibre and glass fragments, and ink mark. Equipment such as a colorimeter, UV lamp and microscopes will be used.

Industrial Chemistry

Yr 10-12 | 120 minutes

Available on request in Terms 2, 3.

Students conduct laboratory-scale experiments which demonstrate an industrial copper production process used in North Queensland. Students extract and refine copper by carrying out leaching, solvent extraction and electrowinning procedures. Students monitor their copper concentrations using titrations and spectroscopy.

NEW! Ask about organising a visit to Queensland Nickel Pty Ltd or the copper refinery to complement your next CSIRO Education visit.

Nanotechnology

Yr 9-10 | 90 minutes

Students will gain an appreciation of processes at the nanoscale, and learn from first hand experience that nanomaterials have different properties compared to bulk materials. They will become more aware of the innovations nanotechnology has brought to areas such as health and medicine, consumer products, energy and the environment.

Limited dates available.

Bodyworks

Yr 8-9 | 90 minutes

Explore the many aspects of the human body- everything from cells, tissues, organs and systems to digestion, bones and joints. Students discover how diet, exercise and lifestyle affect our total well being.

Available from Term 2, 2012

Cool Chemistry NEW!!

Yr 8 | 90 minutes

Students work on a series of hands-on experiments demonstrating reversible and irreversible chemical changes and use a variety of techniques to separate chemicals.

Food Technology—Who Killed the Wedding Guests?

Yr 9-12 | 90 minutes

After the lavish wedding reception of a famous delicatessen magnate's daughter, several guests fall ill and two ultimately pass away. Through analytical research students try to establish reasons for the illnesses and learn all about food hygiene and handling techniques, food science and microbiology.

DNA to the MAX

Yr 9-12 | 90 minutes

CSIRO's BARLEYmax™ is a premium grain much sought after because of its health benefits. However, in this world of sham and deceit, food adulteration is commonplace. In this hands-on workshop students perform a DNA extraction and then use gel electrophoresis to separate and identify different DNA samples to determine whether cereal products sold are really BARLEYmax™.

Can be combined with 'Jumping Jelly Genes' for a complete genetics program!

Jumping Jelly Genes

Yr 11-12 | 90 minutes

Genetically engineer a bacterium with a jellyfish gene which glows under ultra-violet light! Bacterial agar plates are taken back to class for further culturing to identify the success of the bacterial transformation.