

30 November 2009

Dear Head of Science Faculty

I am writing to invite you to participate in Professional Learning for your teachers and enrichment activities for your highly able students.

In March 2010, Woodleigh School will be hosting **Dr. Peter Eastwell** as a Scientist in Residence. He will be running two professional learning activities for Secondary and Primary teachers:

- The Nature of Science and Answering Socio-scientific Questions
- Inquiry Learning and Answering Scientific Questions

In addition, he will run sessions for highly able secondary students:

- Electricity and Lightning
- Nature of Science

He will also run a full "Day with a Scientist" program for Grade 4 - 6 students.

As part of the week, **Mrs Maria James**, the Science Curriculum Manager for VCAA will be speaking on the National Curriculum for Science following a professional dinner held at the school.

I would very much like to see as many interested Mornington Peninsula teachers as possible attending these events and am looking forward to your students also participating in this week.

I have enclosed separate flyers describing each of the programs in more detail. If you would like more information regarding these activities please feel free to ring me at the school on 5971 6100 or contact me by email.

Yours sincerely

Dr. Gary Simpson
Head of Science Faculty
gsimpson@woodleigh.vic.edu.au

TEACHER PROFESSIONAL LEARNING OPPORTUNITIES

Monday 22 March 2010 - Nature of Science and Answering Socio-scientific Questions

Hosted by Woodleigh School, Science Faculty from 1.00pm to 6.00pm

Cost \$190 + gst per person (includes afternoon tea)

What are the different ways of knowing? What is Science? Is conflict between science and religion necessary? Is parapsychology science? Is there such a thing as a scientific fact? What are the limitations of science? Should terms such as *truth* and *prove* be removed from scientific vocabulary? How do we distinguish between a prediction and a hypothesis? What are some myths associated with the nature of science? How do scientists work? How might students address socioscientific questions?

Relax and enjoy the company of colleagues as you explore, in a hands-on manner, a number of science activities relevant to learning about the nature of science. This workshop will contribute to meeting the demonstrated need for strengthening the understanding of primary and secondary educators about the nature of science, while providing participants with a wealth of associated classroom resources. For a more detailed description, please use the "Workshops for Teachers" link at <http://www.sciencetime.com.au/>.

Monday 22 March 2010 – Professional Dinner with Mrs Maria James

Hosted by Woodleigh School, Science Faculty from 6.00pm – 8.30pm

Cost \$30 + gst per person

Participants will have the opportunity to discuss common concerns about science education in particular and education in general while sharing a meal. This will be followed by a presentation by Mrs Maria James the Science Curriculum Manager for VCAA and a member of the advisory panel for the National Curriculum in Science, about the progress of the National Curriculum.

Tuesday 23 March 2010 - Inquiry Learning and Answering Scientific Questions

Hosted by Woodleigh School, Science Faculty from 1.00pm to 6.00pm

Cost \$190 + gst per person (includes afternoon tea)

The benefits, both cognitive and affective, to be gained from using an inquiry approach to learning in the science classroom are well documented, and present

reform efforts around the world advocate such. What is inquiry learning? Why the confusion about inquiry? Don't be fooled by the rhetoric of open inquiry being the ideal. How can a traditional hands-on activity be modified to make it a part of an inquiry learning experience? Part of this workshop models an inquiry lesson for middle-school students, and provides participants with the opportunity to identify and discuss relevant design elements. While the focus will be on science education, the techniques and strategies are applicable across all year levels of the entire school curriculum. For a more detailed description, please use the "Workshops for Teachers" link at <http://www.sciencetime.com.au/>.

ORDER FORM

Please complete the relevant sections of the form below and send accompanied with payment in full (cheques made out to Woodleigh School) to:

Dr. Gary Simpson
Head of Science Faculty
Woodleigh School
Golf Links Road
Baxter VIC 3199

TEACHER PROFESSIONAL LEARNING

Monday 22 March 2010 - Nature of Science and Answering Socio-Scientific Questions

Number of participant's _____ @ \$190 +gst eachTOTAL _____

Tuesday 23 March 2010 - Inquiry Learning and Answering Scientific Questions

Number of participant's _____ @ \$190 +gst eachTOTAL _____

Monday 22 March 2010 – Professional Dinner with Mrs Maria James

Number of participant's _____ @ \$30 +gst eachTOTAL _____

Please list the names of participants:

SECONDARY STUDENT HIGHLY ABLE PROGRAMS (YEARS 7 – 10)

Hosted by Woodleigh School Science Faculty – Tuesday 23 March 2010 only (9.00am
– 12 noon)

Cost \$12.50 + gst per student (max. 100 students. Includes morning tea)

Part A: Electricity and Lightning

Increase students' interest and enjoyment in being involved in science activities, and their motivation to continue to participate in science, by immersing them in a highly visual and entertaining 1-hour examination of interesting, everyday phenomena using equipment that is not readily available. There is much of interest to all secondary students, including those studying Year 12 Physics.

What is the difference between volts and amps, and too much of which one can kill you? What is lightning? What warning signs does lightning give? Does a lightning flash travel upwards or downwards? Why does lightning flicker? Why isn't it a good idea to lie down on the ground when there is a thunder storm around? Why does lightning sometimes kill but at other times does not? Why do so many people die unnecessarily after being struck by lightning? What causes thunder, and why does it rumble? Who holds the world record for the total number of times being struck by lightning and surviving, and what happened to him on each occasion?

For further description please use the link to this show at
<http://www.sciencetime.com.au/>.

Part B: Nature of Science

What are the different ways of knowing? What is Science? What do scientists do? What are the limitations of science? Is conflict between science and religion necessary? Is there such a thing as a scientific fact?

This workshop is a student version of the teacher workshop with this title. The presenter's intention is to meet the demonstrated need for strengthening the understanding of students about the nature of science. Participants may test the telepathic abilities of both a fellow students and a crystal ball.

PRIMARY STUDENT PROGRAM (YEARS 4 – 6)

Hosted by Woodleigh School Science Faculty – Wednesday 24 March 2010 only
(9.30am – 3.00pm)

Cost \$37.50 + gst per student (max. 50 students)

A Day with a Scientist

The aim of this hands-on, extended learning program for Years 4 – 6 students is to accelerate the understanding, further arouse the curiosity, stimulate the imagination, and foster the creative-thinking and problem-solving abilities of students.

Students will experience a number of miscellaneous demonstrations aimed at encouraging them to make predictions, to hypothesise, and to develop explanations and fostering a keen interest in phenomena around them. They will spend the majority of the day working, in pairs, on hands-on science activities. In addition, they may recite science poetry and they may hear science songs. Each student will construct a journal and submit an evaluation that includes a peer report.

Students need to bring food and drink for lunch (morning tea will be supplied – please advise of dietary requirements), a notebook, a pencil or biro and must have covered footwear for their safety. For more details about this program, please use the link to this program at <http://www.sciencetime.com.au/>.

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PRIMARY STUDENT PROGRAM (YEARS 4 - 6)

Wednesday 24 March 2010 – A Day with a Scientist

Number of participant's _____ @ \$37.50 +gst each TOTAL _____

Please list the names of participants and identify dietary requirements.

About the Presenter

Dr Peter H. Eastwell *PhD (Science Education), BSc (Honours, Phys. Chem.), DipEd, MRACI, MACE, C. Chem* is Editor of *The Science Education Review* and Presenter, *Science Time Education*.



Peter enjoyed viewing coral during a tour of the Torres Strait Islands.

Peter's experience as a science educator began in 1978. He taught full-time in Queensland state and independent schools for over 17 years, 12 as Head of Science. He enjoyed his work in the classroom immensely, and documented some of it by authoring the textbook *Physics Spectrum: Constructing an Understanding of Physics* (McGraw-Hill), which promotes a constructivist approach to the learning of senior physics. He also completed doctoral studies on the effects of enrichment and extracurricular science activities on secondary students.

Dr Eastwell's students have been very successful in both State and National science competitions, including being National winners in both the 1996 and 1997 *Earthworm Environmental Awards* for scientific research. He has received a *Service to Science Education Award* (Science Teachers Association of Queensland), a *BHP Science Teacher Award*, and was a finalist in the 1999 *Allen Strom Eureka Prize for Environmental Education Programs*.

Since 1997, Peter has been self-employed as the Director of *Science Time Education*, conducting science programs for students and workshops/seminars for teachers. He is a registered Science and Technology Communicator, an accredited *Primary Investigations* and *Crest Awards* trainer, and has authored broadly in the area of science education. With a deep passion for science education which students find contagious, he enjoys nothing more than sharing his fascination for the scientific principles which govern our world.