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The Geoscience Pathways Project

Attention Science Teachers

Would you like to increase your student interest and engagement in science?

Thanks to the ongoing generosity of our sponsors, the *Geoscience Pathways Project* continues to offer a range of teaching ideas, resources and fully funded teacher mentoring to our member schools.

Our experienced mentor-teacher-geologist can *work directly with you and your science students*, in a range of engaging activities. We offer laboratory activities and local field investigations to suit the Australian Science Curriculum from years 5-10. We are also developing activities to suit the new senior secondary Earth and Environmental Science (EES) courses

Our Project can also provide subsidies for the cost of student buses and a range of special equipment on loan to our member schools. These include class sets of compass/clinometers, GPS units, gold pans and our recently acquired "Quake Caster". (*see below*)

The GPP is a 'not-for-profit' incorporated body of like-minded teachers and geoscientists. We work together to enhance the teaching and increase the uptake of Earth and Environmental Science in SA schools.

Joining is free.

Contact our webmaster for instructions
Amanda: geoscience.pathways@gmail.com

Excellence in teacher PD

The **Teacher Earth Science Education Program (TESEP)** recently provided 30 fully-funded places for teachers in an excellent field trip to Cape Liptrap, which was followed by a special presentation for teachers at the AAPG-ICE conference in Melbourne.

Teachers from all states and territories attended, including five teachers from South Australia.



The dinosaur dig

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Upcoming workshops:

'Opals' PD for teachers at the SA Museum

Tuesday 20th October from 4.00 pm – 6.00 pm (\$20)

Geologist and Senior Curator of the Museum's minerals collection, Ben McHenry will unpack the geological history behind the formation of opal in Australia. Learn how opal is formed, the physics behind its colour and light and why SA opal is the best in the world. Bookings are essential. (See further details on the back page of this newsletter.)

SASTA Middle School (6-10) STEM Conference:

Friday 27th November at Nazareth College Secondary Campus, Hartley Rd. Flinders Park from 11:45 – 12:45:

Working Together Collaboratively for Excellence in Earth & Space Education (presenters Len Altman & Kelly Sharrad) Register at: www.sasta.asn.au

TESEP PD1 'Round and Round with Rocks':

Friday 4th December at Grant High School, Hosking Ave. Mt. Gambier, from 9:30 am -1:30 pm, followed by the launch of our newly developed **Field Investigation** for Year 7- 8 teachers, on **Saturday 5th December** from 9:30 am – 3:30 pm. (presenters Kelly Sharrad and Cynthia Pyle)

TESEP PD9: 'Plate Tectonics'

Sunday 6th December at Grant High School, Hosking Ave. Mt. Gambier, from 9:00 am -12:30 pm, with presenter Greg McNamara, an experienced geologist and science teacher, TESEP Executive Officer, editor of the Australian Geoscience Council's GeoEdLink e-newsletter, and Education and Outreach Consultant to the Geological Society of Australia.

TESEP PD2 'Riding the Climate Roller Coaster'

Sunday 6th December at Grant High School, Hosking Ave. Mt. Gambier, from 1:30 pm - 4:30 pm, also with presenter Greg McNamara.

Note that all three of the above TESEP workshops are ASTA accredited and fully funded, including travel, meals and accommodation where applicable. A non-refundable \$55 Registration fee applies. Early registration is essential. For more detailed information and a registration form:

email: SA_coord@tesep.org.au



The Blue Lake in Mount Gambier will be a focus of the field trip for teacher participants in TESEP PD 1 on 4th Dec.

Excellence in teacher PD (cont)

Teachers were also treated to an interesting and very well-guided tour of the **historic Wonthaggi coal mine**:



Following a very interesting and informative plenary session (above) at the AAPG-ICE conference, inspirational speakers to our teacher group included Gary Nicol (geophysicist), Nadine Savage (geotechnician), Nigel Murphy (environmental geologist), Carey Hannaford (biostratigrapher/ palynologist), Chevaun Gellie (minerals exploration geologist), Ingrid Campbell (exploration geologist/ manager), Bruce McKay (exploration geologist, board director) and Kevin Lanigan (exploration geologist oil/gas/coal seam gas).

Teacher Feedback:

It was great to speak to one year 12 Science teacher, who said she was: "blown-away" by the fieldtrip and Teachers' Day/Conference experience. She said, "This was the best PD I have ever done. So well organized."

Another: "The best geology weekend ever. I will have more enthusiasm in teaching Geology (after doing this PD). I could influence about 600 students (Yr 7-12)."

Another reported: "I could pass this experience and knowledge on to 10s of teachers and 100s of students."

One 7-10 Science Maths teacher said "The fieldtrip was amazing ... so much of my Tertiary studies was made real here, (albeit 20years later). Kevin and Richard's knowledge was presented at a very appropriate level.", "I welcomed the opportunity to discuss applications with teachers from other states." & "The field exposures were fantastic."



Australia wins Earth Science Olympiad medals

Three highly talented students who represented Australia in the 2015 Earth Science Olympiad in Brazil won gold and silver medals. The win puts these students in the top echelon of Earth and Environmental Science students in the world.

Sydney's Zoe Thompson from Redlands School was the only girl in the world to win a gold medal in the competition, which involved a total of 91 students from 22 countries.

Joining Zoe on the podium to receive silver medals was Sacha Mann from Girton Grammar School in Bendigo, Victoria, and Tim Hume from Mansfield Secondary College, Victoria.

The win might encourage more Australian students to apply to participate in future Olympiads, and hopefully, more Australian students to take up studies of Earth and Environmental Science.

The 2016 Earth Science Olympiad will be in Japan

Equipment for loan

Our "QuakeCaster" has been adapted from a design by the USGS to enhance inquiry based learning about earthquakes. It is an ideal apparatus for facilitating a 'design-prac' for SACE Geology students, or for an engaging plate tectonics activity for Year 9's.

The Quakecaster and various other equipment is available for loan to our member schools.



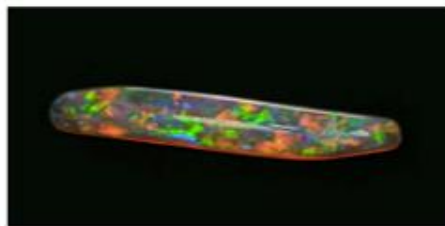
Remember our Aim

We aim to increase student interest and engagement in Science during the middle years, through our special focus on developing engaging teaching and learning activities across the *Earth and Space* sub-strand topics of the Australian Science Curriculum (F-10).

We thereby aim to increase student uptake of senior secondary science, particularly the new *Earth and Environment Science* courses when they are launched in SA in 2017 and 2018.

Through our collaborative efforts we aim to provide teachers with the necessary background, support and confidence to successfully teach EES and thereby foster its uptake in schools.

Opals at the SA Museum: PD for teachers



Date: Tuesday 20th October Venue: South Australian Museum Time: 4-6pm Cost: \$20 to be paid on the day

To coincide with the Opals exhibition, Education is offering a two-hour professional development session for teachers, focusing on the science and history of this remarkable gemstone.

Geologist and Senior Curator of the Museum's minerals collection, Ben McHenry will unpack the geological history behind the formation of opal in Australia. Learn how opal is formed, the physics behind its colour and light and why SA opal is the best in the world.

The South Australian Museum's Exhibition Designer, Brett Chandler will then present the big picture concepts featured in the exhibition. Learn the processes behind the design of the key exhibition areas and hear amazing stories of human ingenuity when searching for opal in remote regions.

An opportunity will be given to ask questions and to view the Opals Exhibition after hours.

This professional development addresses geological concepts covered in years 11 and 12 SACE, as well as Earth and Space science understandings for primary years. It is highly recommended that you attend this session if you are thinking of booking your class in to view the exhibit.

If you teach science, this professional development is a great opportunity to listen and learn from Museum specialists and view some of the world's best opal. A certificate of attendance aligned to the AITSL standards will be issued after the session. **Bookings are essential.** Ring Pamela on **8207 7429**

Our GPP Management Committee:

- Chair: Len Altman (MSC / GSA)
- Secretary & webmaster: Amanda Vernik
- Treasurer: Kelly Sharrad (teacher/ geologist)
- Margaret Baxter (Open Access College)
- Alan Collins (University of Adelaide/ GSA)
- Mike Roach (Hamilton Secondary College)
- Katrina Holmes (Blackwood High School)
- Di Whittington (Open Access College)
- Cynthia Pyle (former SACE Board)
- Peta Abbot (DSD teacher/ geologist)
- Gerry Carne (SANTOS/ Beach Energy)
- Bronwyn Mart (Magill Primary School)
- Christine Thomson (DECD)
- Peter Turnbull (former DECD advisor)

