

# Geoscience Pathways Project Newsletter

(December - 35)

We are a 'not-for-profit' incorporated body of like-minded teachers, academics and geoscientists. We work together to support the teaching and learning of Earth in Space (R-10) under the Australian Science Curriculum and senior secondary (SACE) Earth and Environmental Science (EES). Thanks to the generosity of our sponsors we continue to offer unique and timely support as described on these pages.

For information contact the Geoscience Pathways Project:

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## 2022 Earth System Study Video Competition – Winners to be announced soon

The judges are currently looking over the entries to vote for their winning and runner up videos. Keep your eyes on our facebook and website for the winners. The entries this year were of outstanding calibre and we look forward to announcing and sharing them with you soon.

[GeoScience Pathways Website: 2022 Earth and Environmental Science: Earth System Study Competition](#)



## SAVE the date for the Geoscience Pathways Annual Implementation Workshop 2023

The date has been set: **Friday, 24 February 2023 – 1pm – 4pm**

Location: The Sprigg Room (located in the Mawson Laboratories building, opposite Adelaide Botanic High School) at the University of Adelaide.


Our annual workshop is always a hit with EES teachers and a fantastic opportunity to network and connect.

Booking and more details to come early in the new year.

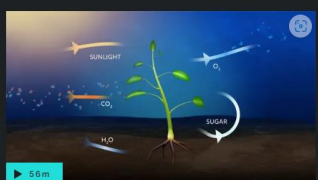
## Home: The Story of Earth

In 1969, the first humans to travel to the moon looked back at the whole of the Earth. Since then our understanding of our planetary home and our impact upon it has grown exponentially. Watch the videos on ABC iview catch up TV


**Series 1**




**Episode 1 Air**  
Earth's atmosphere weighs just one millionth of the mass of the planet, yet this fragile layer of air ensures the planet can be a home for life as we know it.  
This episode was published 3 months ago.



**Episode 2 Water**  
Earth is the only planet with liquid water on its surface, and the story of this living planet is carried by water.  
This episode was published 2 months ago.



**Episode 3 Land**  
A magnificent journey that uses fossil finds and satellite imagery to explore the beauty and wonder of the terrestrial realm that is our home.  
This episode was published 2 months ago.



**Episode 4 Human Planet**  
Vying for first place in the ranks of Earth's most influential species of all time, Human endeavours have had conflicting impacts on our planet. (Final)  
This episode was published 2 months ago.

[Home: The Story Of Earth : ABC iview](#)

## Earth and Environmental Sciences – Year 11 and 12 Resources

The Australian Earth Science Education website has a huge collection of resources in the EES area. Covering:

- Formation of Earth and the Solar System,
- Minerals,
- Rocks and the Rock Cycle, Soils,
- Water,
- Weather, Climate and Hazards,
- Climate Change,
- Ecosystems and Sustainability,
- Plate Tectonics and
- Geohazards and Fossils and Geological Time.

This website even includes from foundation level

[Home - Australian Earth Science Education \(ausearthed.com.au\)](http://ausearthed.com.au)



### Ecosystems and Sustainability

- Multicellular Life – Presentation
- Multicellular Life – Presentation Notes
- Multicellular Life – Student Worksheet
- Introduced Species – Post
- Impact of Introduced Species – Presentation
- Impact of Introduced Species – Presentation Notes
- Impact of Introduced Species – Student Worksheet
- Watch our video exploring how to conduct a field study of introduced species in your area
- Organisational Sustainability – Student Worksheet
- Implementing Alternative Energy – Student Worksheet
- Salinity – Causes and Rehabilitation – Presentation
- Salinity – Causes and Rehabilitation – Presentation Notes
- Soil Salinity – Student Worksheet
- Solid Waste Management – Presentation
- Solid Waste Management – Presentation Notes
- Solid Waste Management – Student Worksheet
- Sustainability – Tree Planting – Student Worksheet
- Waste Audit Video
- Waste Audit – Student Activity
- Waste Management – Student Worksheet
- Cutting Heavy Equipment Emissions – Student Worksheet

## STEM opportunities for your students

The University of Adelaide would like to invite you and your students to participate in the innovative Energy, Mining and Resources School Outreach Program (EMRSO).

The EMRSO program offers a suite of interactive, curriculum-aligned workshops for Years 7-12 students delivered both at your school and on our campus. Additionally, the program will offer Year 12 student networking opportunities with industry as well as spark student interest in making the resources sector more sustainable and the global impacts they can make on an individual level.

In 2023 the University of Adelaide are also bringing two exciting immersive, on-campus experiences to give students the opportunity to gain hands-on experience in the sector. Register your interest via the links below:

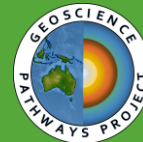
**Year 11 & 12** – Wednesday 22nd of March 2023 (Term 1 Week 8) [\*\*REGISTER YOUR INTEREST\*\*](#)

**Year 9 & 10** – Wednesday 27th of September 2023 (Term 3 Week 10) [\*\*REGISTER YOUR INTEREST\*\*](#)

Facilitated by Phoebe Chilman, a graduate Chemical Engineer from the University of Adelaide with a specialisation in Sustainable Energy, Phoebe is passionate about our society's transition to decarbonisation and the role Australia's energy, mining and resources sectors are playing.

The industry underpins all areas of our modern life; our smartphones, our homes, means of transport, and even down to our health care provisions. In order to sustain our way of life in addition to meeting global energy demands in line with renewable energy targets, critical minerals and transformative energy technologies will be required at an unprecedented scale. To improve safety, efficiency and productivity, Australia's energy and resources sector is also undergoing significant digital transformation. Drones, virtual and augmented reality, autonomous systems, big data and off-Earth exploration require a workforce equipped with a new skillset. The future of this sector is changing rapidly, offering a range of exciting careers for young South Australian students with a demand that has never been greater.

For more information about the EMRSO program and book an activity: [\*\*FURTHER INFORMATION\*\*](#)



## GeoSciEd X international conference in Adelaide in 2026

<http://www.igeoscienced.org/about-the-igeo/>

This international event will bring unique opportunities to showcase the work done by our GPP and the various resources we have developed. It will be an ideal opportunity to raise wider interest in teaching SACE Earth and Environmental Science in SA schools.

Teachers and students will have opportunity to be directly involved by participating in a range of activities, together with others from around Australia and overseas.

For more information about forward planning of the event please contact our Geoscience Outreach Officer Kelly Sharrad: [ksharrad@gmail.com](mailto:ksharrad@gmail.com)

## Renewed Funding Support from the SA Government

Last week, we were delighted to receive a letter from DEM Minister (Tom Koutsantonis), offering the 'Gold Sponsorship' (\$10 000 pa) for our GPP work over the next two years. See the letter [here](#).

We have also been promised 2023 funding from some other sponsors, including the SA Div. of the Geological Society of Australia (GSA), but unfortunately it remains uncertain whether we will be able to attract sufficient funding/sponsorship to continue all of our 2022 activities next year. We are short by \$30 000 relative to our 2022 expenditure.

### PLEASE SUPPORT US

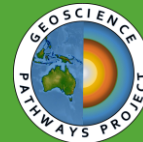
Gold sponsorship \$10 000 pa

Silver sponsorship \$5000 pa

Bronze sponsorship \$2500

For information about sponsorship contact: [lenaltman9@gmail.com](mailto:lenaltman9@gmail.com)





## What the Geoscience Pathways Project can offer your school



# WHAT GEOSCIENCE PATHWAYS PROJECT CAN OFFER YOUR SCHOOL FOR FREE

### Professional Development

Teachers new to Earth and Environmental Science (EES) will be provided with PD opportunities that directly relate to the content and skills required to teach Stage 1 and 2 EES.

### Summative Assessments

Pre-prepared assessment materials including LAPs, non-traditional SATs, laboratory investigations and local field trips.

### Lesson Resources

Pre-prepared topic unit sequences, PowerPoints with learning intentions and success criteria, hands on learning activities and teacher notes.

### Ongoing Mentoring

Teachers will have ongoing access to Geoscience Outreach Officer, Kelly Sharrad, who is a co-writer of the SACE EES curriculum, experienced classroom teacher of Stage 1/2 EES and SACE marker and moderator of EES.

Geoscience Pathways Project's role is to promote and support the education of Geoscience within South Australia and the Northern Territory. Our main focus is supporting schools to offer Stage 1 and 2 Earth and Environmental Science. As a not for profit organisation, all our services are offered FREE to schools.

### INFORMATION

To learn more about how we can support the roll out of EES at your school, please contact Kelly Sharrad at [ksharrad@gmail.com](mailto:ksharrad@gmail.com)





Read all of Kelly's amazing infographics and more about her role as the GOO [here](#)

# The Origin of Animal Life

Learn about South Australia's amazing Natural History

Come on a fun and educational tour at the South Australian Museum and learn about the ancient life that once thrived in our oceans and walked our lands.

Dr Felicity Coutts will take your class back in time on a guided session through the Palaeontology level of the South Australian Museum. Hear how our ancient animal ancestors – the Ediacara biota – went extinct and gave rise to the Cambrian 'explosion' of animal life as we know it today!

Learn about South Australia's marine reptiles during the age of the dinosaurs, and how they became opalised, and discover the extinct giant marsupials that once roamed Australia.

Educational sessions begin on the lawns outside the South Australian Museum at 9.45am and finish by 11.45am. Transport to and from the South Australian Museum to be arranged by the school.

Sessions will address the following year levels and key curriculum content

## **Year 4: Earth & Space Sciences**

*Earth's surface changes over time as a result of natural processes and human activity (ACSSU075).*

Elaboration: Collecting evidence of change from local landforms, rocks or fossils.

**Activity Sheet:** Observing and evaluating fossils and rocks.

## **Year 5: Biological Sciences**

*Living things have structural features and adaptations that help them to survive in their environment (ACSSU043).*

**Activity Sheet:** Observing and evaluating the different fossilised animals, their different body types and how these body types are adapted to the surrounding environments.

## **Year 6: Biological Sciences**

*The growth and survival of living things are affected by physical conditions of their environment (ACSSU094).*

**Activity Sheet:** Observing the past environments where animal life lived. Evaluating how physical changes in these environments led to changes in the animal communities and influenced their survival.

## **Year 10: Biological Sciences**

*The theory of evolution by natural selection explains the diversity of living things and is supported by a range of scientific evidence (ACSSU185).*

Elaboration: Evaluating and interpreting evidence for evolution, including the fossil record, chemical and anatomical similarities, and geographical distribution of species.

**Activity Sheet:** Observation of past animal communities and specific fossils shows how animal life has changed dramatically over time through natural selection. Reference to scientific articles to show how scientific discoveries are made.



Students will be supplied with an engaging worksheet (aligned with the curriculum) on arrival. Felicity will engage with the students and use the activity sheet to help facilitate student learning throughout the session.



**Location:** South Australian Museum, Level Three

**Duration:** 2 hours

**Cost:** \$25 per student | Maximum 30 students per group

To book or get in touch, contact Felicity at [felicityjcoutts@gmail.com](mailto:felicityjcoutts@gmail.com) or 0418 831 944

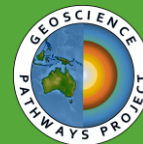
\*To provide enough notice, please book at least two weeks in advance of the session\*

Please note: The topics of the educational session will depend on the year level of the class

Altered start and finish times of the sessions can be arranged

See you at the South Australian Museum! ☺





### Next Meeting

Our next Committee meeting will be a 'virtual' meeting using Google Meet:

**Tuesday 7<sup>th</sup> February 2023 at 4:30pm**

Please email [geoscience.pathways@gmail.com](mailto:geoscience.pathways@gmail.com) if you wish to join,  
All are welcome.

### 2022 Committee Members

The following are the members of our current Geoscience Pathways Management Committee who were elected at our AGM in March 2022:

Len Altman (Chairperson)  
Kelly Sharrad (GOO, Birdwood High School)  
Luke McKay (GPP Coordinator)  
Amanda Vernik (GPP Webmaster, GPP Secretary)  
Graziela Miot da Silva (Flinders University - Earth Scientist)  
Bronte Nicholls (Adelaide Botanic High - Teaching EES)  
Tamara Cave (Tate Museum)

Lewis Subelli (Uni of Adelaide - Pre service teacher)  
Peter Reeves (Flinders University - PHD)  
Alan Collins (University of Adelaide - Professor)  
Carol Aldous (Flinders University - Earth Science Teacher Education)  
Kelly Sharrad (Birdwood High School - GOO)  
Sarah Chinnner (BHP)  
Zoe Hewett (Department for Energy and Mining)

Thank you to our members for their dedication and support to the Geoscience Pathways Project.

*Wishing you all a safe and happy holidays see you in 2023!*