



Progress against the Implementation Plan

Timing	Planned Activities	Status
July 2021 to June 2022	Continued development of dedicated, branded materials in support of NSW EES education.	<ul style="list-style-type: none"> • 28 resources published
	Development of videos featuring hands-on activities and blog posts in support of these resources for the AusEarthEd YouTube channel and Blog respectively.	<ul style="list-style-type: none"> • 16 blogs and 8 videos published
	Free hands-on incursions offered to EES classes across NSW (regional incursions according to organisational travel plans). Virtual incursions will be offered during times of restrictions (caused by the COVID-19 pandemic) and to regional schools that don't fit into AusEarthEd's travel plans.	<ul style="list-style-type: none"> • 38 half day incursions (34 in person, 4 virtual) • 19 content revision sessions for EES classes across NSW (3 in person, 16 virtual)
	Free teacher professional development sessions offered in support of EES teaching across NSW. A mix of virtual and in-person sessions will be offered, to suit the situation and engagement target group.	<ul style="list-style-type: none"> • 2 in person teacher preview sessions of the Core Library excursion (frequent interactions with exploration geologists) • 9 virtual teacher PD sessions through AusEarthEd • 2 virtual conference presentations
July 2021	Free online revision seminars offered to Year 12 EES students	<ul style="list-style-type: none"> • 2 revision webinars • 191 attendees
September 2021	Showcasing of this program at the Conference of the Australian Science Teachers' Association (CONASTA) (assuming the conference goes ahead, as planned).	Conference was cancelled due to COVID (now scheduled for September 2022)
September – October 2021	Free revision seminars offered to Year 12 EES students (a combination of face to face and virtual access options will be offered, as appropriate).	<p>All virtual due to COVID</p> <ul style="list-style-type: none"> • 6 revision webinars • 272 attendees • 51% regional or remote
October 2021	Participation in, and student/teacher engagement with, the Australian Gold Conference (conference organisers and COVID restrictions permitting).	Conference moved to June due to COVID. Teachers and students from PLC Sydney attended June 2022 event.



Key Performance Indicators – Targets and Totals

Key Performance Indicator	Target	Total	Notes
Program Success Measures			
The number of new materials added to the dedicated website for this initiative	40	52	Published resources available via website, blog and YouTube channel. See Appendix 1 for detail.
The number of educators involved in face-to-face professional development	150	329	Mix of online and in person PD available to metropolitan and regional teachers. See Appendix 2 for detail.
Details from surveys conducted with participating educators, demonstrating confidence in teaching Earth and Environmental Science pre and post engagements	75%+ noted increase in teaching confidence	93%	Educators had the opportunity to complete PD and to learn with students during incursions. See Appendix 3 for detail.
The number of students involved in standard incursions (revision incursions and webinars)	1000	720	Most sessions were virtual in response to COVID restrictions. See Appendix 4 for detail.
The number of students involved in Core Library excursions	Not assigned	74	New offering. See Appendix 4 for detail.
The number of students involved in half-day incursions	300	317	These curriculum-linked offerings feature resources industry content.
The number of students and teachers involved in industry-led events, supported by the Program	50	8	Australian Gold Conference and NSW Mining Awards dinner. Unfortunately, other opportunities were cancelled due to COVID.



Funding

	Resource Creation and Hosting	Teacher Training and Mentoring	Incursions and Excursions	Events and Engagement with Industry	Administrative Costs	Total
2021/22 Budget	70,000	15,000	20,000	5,000	10,000	120,000
2021/22 Expenditure	64,209	11,203	18,281	3,266	9,655	106,614*

Note: Funds available through direct funding of this program in 2021/22 was \$96,500. The additional ~\$10,000 was funded through AusEarthEd. Additional supporters are currently being sought to bring direct funding up to the ideal \$120,000 per annum.

Changing Perceptions

146 EES students completed an anonymous online survey before and after programs that contained content about mining. This included Core Library excursions, Resource Management incursions (half day) and Exploration and Mining (half day) incursions. All programs were conducted by the same presenter and stressed the importance of mining. Students were from all school sectors and a variety of locations, primarily in greater Sydney.

Their 'after' survey responses were significantly more positive towards the following statements:

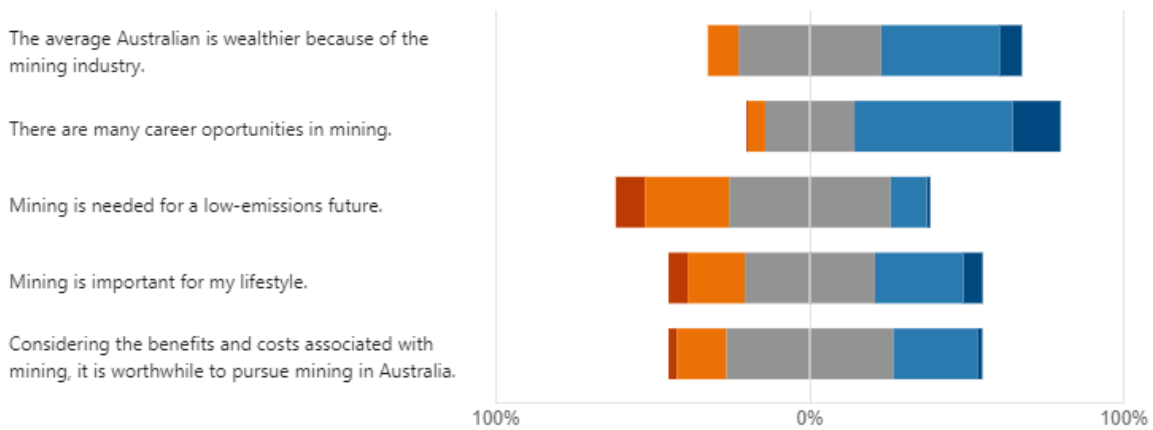
- The average Australian is wealthier because of the mining industry
- There are many career opportunities in mining
- Mining is needed for a low-emission future
- Mining is important for my lifestyle
- Considering the benefits and costs associated with mining, it is worthwhile to pursue mining in Australia

See the next page for comparisons



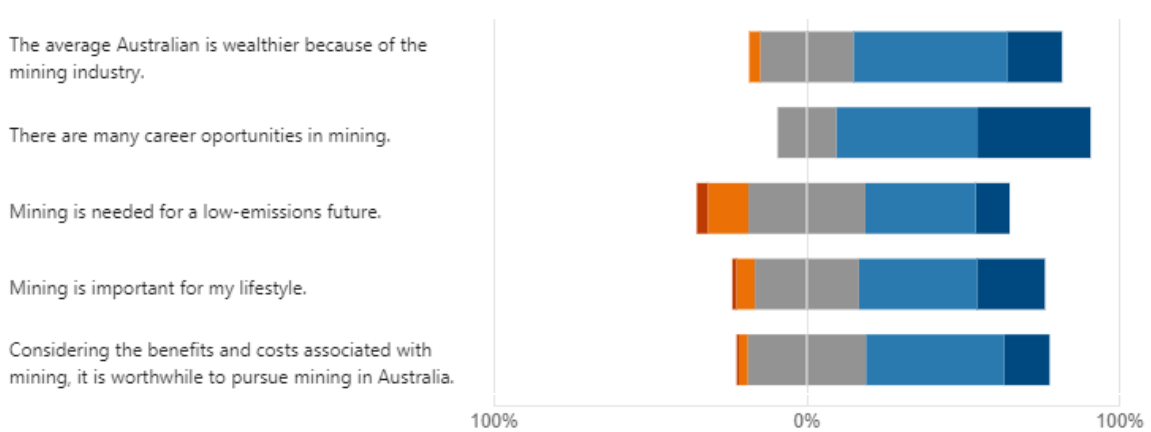
Pre-engagement survey results

Strongly disagree Disagree Neutral Agree Strongly Agree



Post-engagement survey results

Strongly disagree Disagree Neutral Agree Strongly Agree



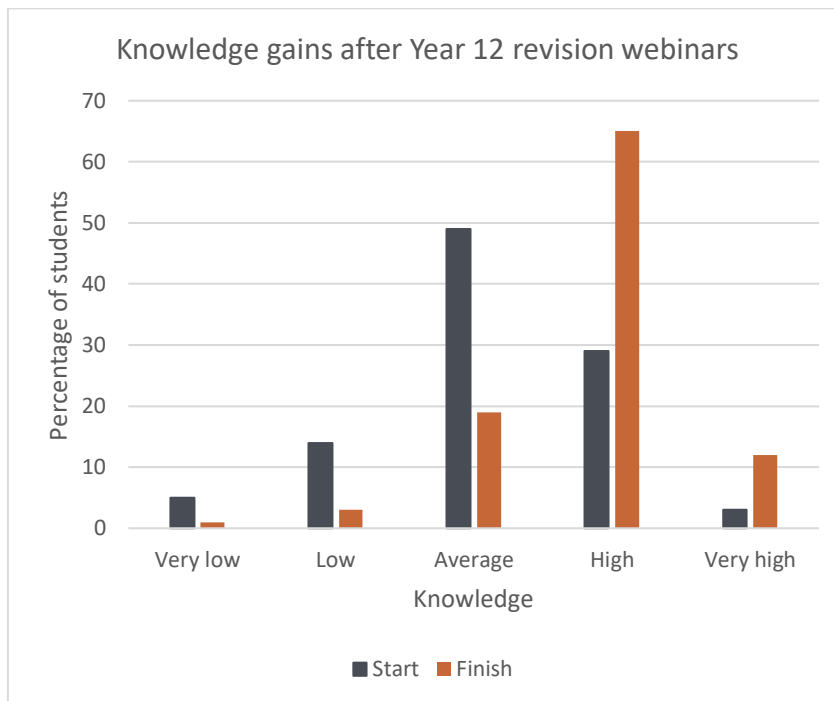
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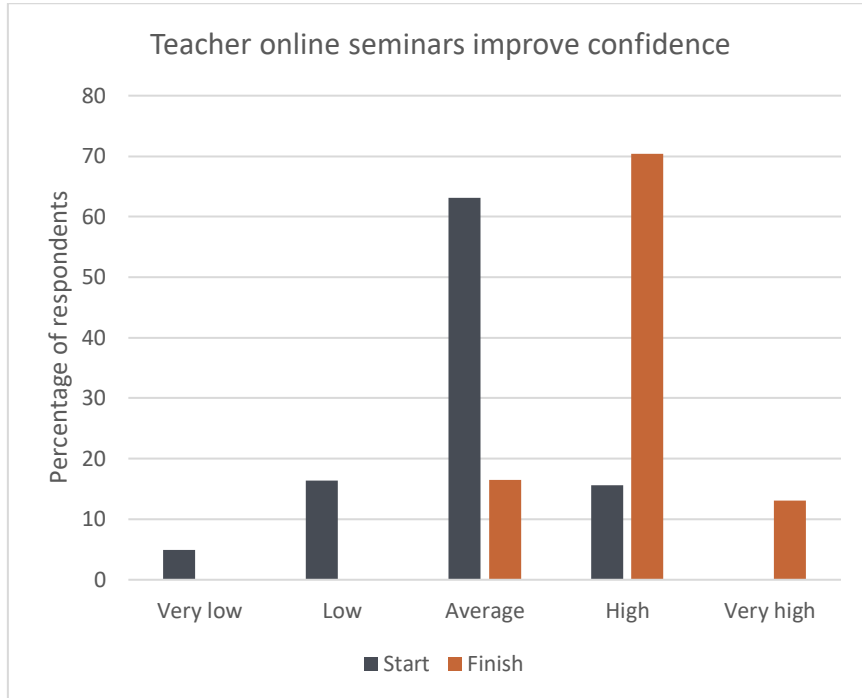




July 2021 – December 2022 Highlights

- **28 new NSW curriculum teaching resources** uploaded to the [AusEarthEd website](#)
- **High regional and rural engagement** at online events: 51% of HSC revision webinar participants, 45% of teacher online PD participants and 95% of UNE GRASS conference participants
- **Core Library Teacher Previews** featured resources industry content and the opportunity for teachers to talk to exploration geologists looking for gold. Responses were very positive. This led to 8 school groups participating in Core Library excursions.
- **Australian Gold Conference** was attended by students and teachers from PLC Sydney.
- Attended the **NSW Women in Mining Awards Dinner** with teachers from PLC Sydney and Patrick's Maris College





Excursion at the Australian Gold Conference with Presbyterian Ladies College, June 2022

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Incursion with Ambarvale High School, March 2022



Incursion with Wenona School, March 2022



Excursion at the Core Library with Ingleburn High School, March 2022

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Susan is an awesome educator. Her knowledge and understanding of the EES course is very comprehensive. She is warm and engages with the students using very-well constructed resources and student-centred activities mapped to the NSW curriculum. Thanks for having us!

My students and I are very privileged to have access to this excellent facility, experts in the field and an outstanding educator like Susan Filan.

Susan has been extremely helpful and her knowledge base is phenomenal. The students were very engaged in the incursion which allowed them to consolidate their understanding of rocks, minerals and the rock cycle and introduce them to the concepts of mining. Thank you!

As always, your session was wonderful. The students were super engaged and really enjoyed the hands-on activities. Thanks so much for joining us!

It was an amazing incursion and all my students were engaged and enjoyed the day! You have given me more ways to engage and teach my students in the future.

My students really enjoyed the incursion! They had a lot of fun and I also learnt new things and new ways to approach some Module 1 concepts. Thank you so much for an amazing day!

Was a great engaging hands on day. Susan provided us with activities that I will repeatedly drawn upon as we move through the Module.

More of the same, more opportunities for incursions would be wonderful. As a regional school it is difficult to get to Sydney very often especially with the hoops you have to go through for an excursion so having Susan come to us is an awesome opportunity. More opportunities for this would be great.

Students really enjoyed themselves and benefited from activities and content directly related to their course requirements.





Appendix 1: Resources Developed

Date of Release	Resource Description	Website	YouTube	Blog
27-7	Exploration Drilling and Rehabilitation	√		√
11-8	Zircons are forever	√		√
12-8	Zircon data processing activity	√		
12-8	Sustainability and Mining PPT, teacher notes and worksheet	√		
18-8	Overview of Agriculture in Australia	√		√
19-8	Future of Agriculture in Australia	√		√
22-9	Earthquake Hazards and ground motion	√	√	√
23-9	Earthquake Pavlova Model	√	√	
13-10	Volcanoes and Climate, Stratigraphy and Geological Events, Dating Rocks, Solar Radiation, LIPs and Climate, Past Climate Data Processing, Earthquake Depth, Hydrogen Economy, and Water Case Study	√		
1-11	Net Zero Blog	√		√
31-1	Mine Rehabilitation Student worksheet, Partial Melting and Magma Student Worksheet, Resource Extraction Student Worksheet, Stormwater treatment - Data Analysis Activity, Density Layers Student Activity, Waste Audit Student Activity, PTSC Student Activity	√		
4-2	Tectonic Updates	√		√



Date of Release	Resource Description	Website	YouTube	Blog
7-2	Human Impact on Natural Disasters: Drought			✓
9-2	Waste Audit		✓	
14-2	Human Impact on Natural Disasters: Fire			✓
16-2	Layer Cake Drilling and Modelling		✓	
	Plate Tectonic Supercycle		✓	
	Plate Tectonic Supercycle			✓
17-2	Waste Management - Student Worksheet	✓		
21-2	Human Impact on Natural Disasters: Flood			✓
28-2	Human Impact on Natural Disasters: Landslide			✓
2-3	Earthquake Hazards: Surface Rupture and Landslides		✓	
14-3	Reading Rocks: Climate Evidence			✓
7-3	BIFs and Photosynthesis			✓
30-3	Extraterrestrial Tectonics			✓
30-3	Icy Tectonics	✓		
28-3	Volcanoes and Climate			✓
4-4	Viscosity and Volcanoes	✓		
27-06	Cutting Heavy Equipment Emissions	✓		

Total resources for period = 52

Project total = 52

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Appendix 2: Educator Training and Mentoring

Date	Location	Session Outline	Duration	Number of Educators
26-7	Online	M5 & M6 Teacher PD	1.5	29
27-7	Online	M7 & M8 Teacher PD	1.5	29
28-7	Online	M5 and BIFs Teacher PD	1	26
2-9	Online	UNE GRASS presentation: School of Rock	1.5	20
18-10	Online	Year 11 TPD M1&2	1	24
19-10	Online	Year 11 TPD M3&4	1	23
18-11	Online	AIS Conference: Stage 6	1.5	6
7-12	Core Library, Londonderry	Teacher Preview of Core Library excursions	3	5
25-01	Core Library, Londonderry	Teacher Preview of Core Library excursions	4	9
01-02	Online	M1 and M2 Teacher PD	1.5	43
02-02	Online	M3 and M4 Teacher PD	1.5	32
08-02	Online	M5 and M6 Teacher PD	1.5	25
09-02	Online	M7 and M8	1.5	16

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29-06		Teacher PD		
	Online	M5 and M6 Teacher PD	1.5	25
30-06				
	Online	M7 and M8 Teacher PD	1.5	17

Total educators for period = 329

Project total = 924

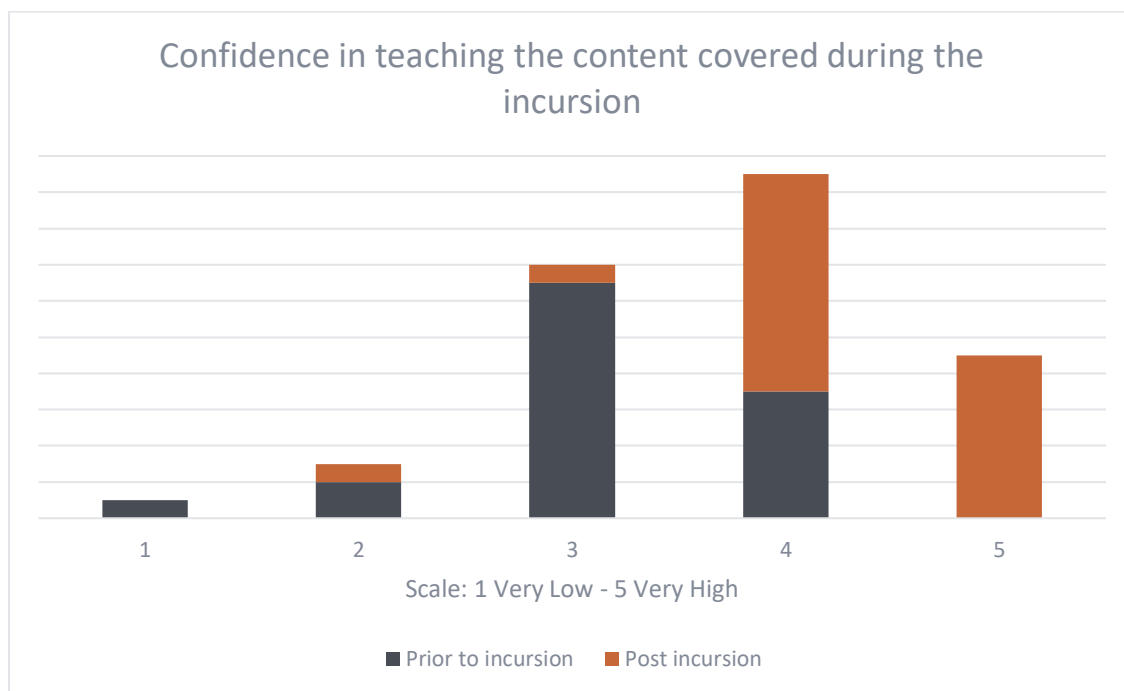
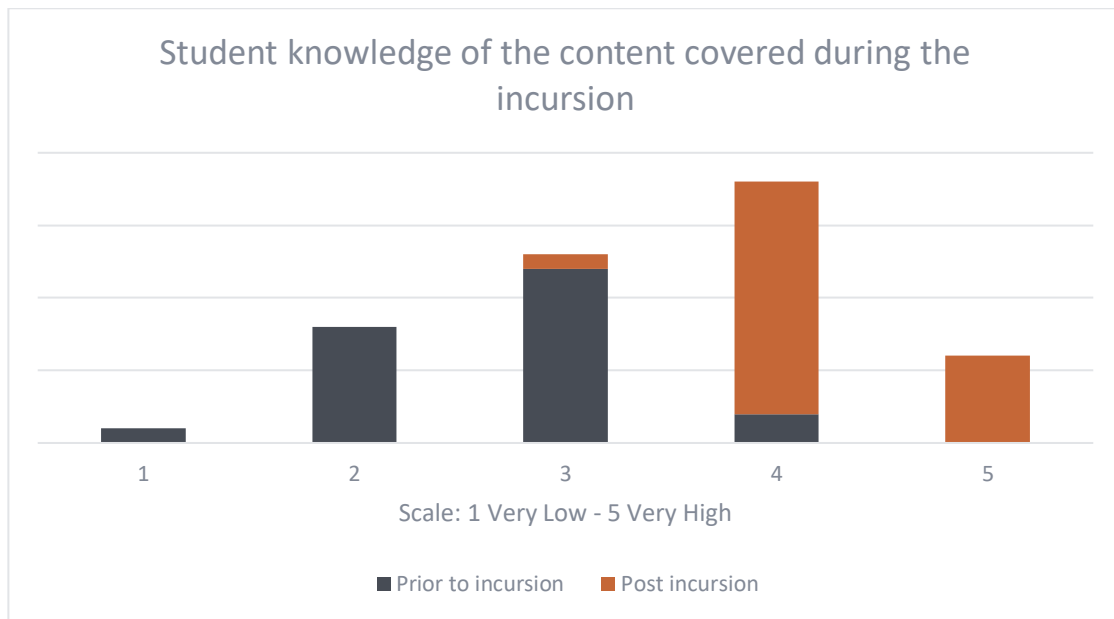
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Appendix 3: Results from surveys of educators

Results from surveys of educators following engagements showed a significant shift in student knowledge and teacher confidence.



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Appendix 4: Engagement with Students

Date	Location	Session Outline	Duration	Number of Students	No. of Educators
1-7	Online	M7 Revision Webinar	1	102	
1-7	Online	M8 Revision Webinar	1	89	
14-7	Trinity Catholic College, Lismore	M5 and HSC Technique revision	1.75	15	1
15-7	Pittwater House	M1 Mining and Exploration incursion	2	4	1
20-7	Trinity Catholic College, Lismore	M6 Revision	1	17	1
21-7	Mater Maria	M5 and HSC Technique revision	2	14	1
26-7	Abbotsleigh	M8 Resource Management	2.5	14	1
4-8	Cronulla High School	HSC Technique	2	19	2
6-8	Fort Street high School	M8 Resource Management	2	10	1
18-8	Mount St Patrick High School	M6 & M7 Revision	2	10	1
24-8	The Ponds High School	M1 Revision	1	14	1
26-8	St Patrick's College	M5 Revision	1	7	1
26-8	The Ponds High School	M2 Revision	1	15	1

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Date	Location	Session Outline	Duration	Number of Students	No. of Educators
30-8	The Ponds High School	M3 Revision	1	15	1
1-9	Mount St Patrick High School	Year 11 Revision	2	16	1
2-9	The Ponds High School	M4 Revision	1	15	1
14-9	Lambton High	M8 revision webinar	1	7	1
7-10	Newington College	M5 revision	1	13	1
14-10	Lambton High	M7 revision	1	5	1
15-10	Newington College	M6 revision	1	13	1
20-10	Wenona	M5 & M8 revision	2	5	1
1-11	various	M5 revision webinar	1	52	
1-11	various	M6 revision webinar	1	47	
2-11	various	M7 revision webinar	1	50	
2-11	various	M8 revision webinar	1	49	
3-11	various	HSC Technique webinar	1	39	
3-11	various	Key content webinar	1	35	
15-11	The Ponds High School	M8 Resource Management	2	16	1
19-11	Davidson High School	M5 & BIF incursion	2	10	1

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Date	Location	Session Outline	Duration	Number of Students	No. of Educators
22 - 11	Narrabeen Sports High School	M5 Fossil incursion	2	3	1
10 – 12	Blaxland High School	M5 Fossil incursion	2	7	1
15-02	Presbyterian Ladies College (PLC Croydon)	Core Library Excursion Y11	3	12	1
21-02	Wahroonga Adventist School	M1 Y11	5	3	2
24-02	Wenona School	M1 Y11	5	6	1
25-02	Glenwood High School	M1 Rocks and Minerals	3	21	1
02-03	St Ives High School	M1 Y11	5	15	1
04-03	Leumeah High School	M1 Y11	5	14	1
10-03	Cherrybrook Technology High School	Module revision M5, M6, HSC Technique	3.5	13	1
11-03	Glenwood High School	M5 and M8	5	18	1
14-03	Loreto Normanhurst	M1	5	7	1
16-03	Ambarvale High School	M1	5	14	1
18-03	Irrawang High School	M1	5	10	1
22-03	St Columbas Catholic College	Core Library Excursion Y11	3	7	1

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Date	Location	Session Outline	Duration	Number of Students	No. of Educators
08-03	Ingleburn High School	Core Library Excursion Y11	3	13	1
23-03	Marian Catholic College	M1	5	12	1
24-03	Wiley Park Girls High School	M1	5	9	1
25-03	Endeavour Sports High	M1 (Rocks and Mining)	3.5	15	1
04-04	Bomaderry High School	M1 Mining and M8	5	5	1
05-04	Moruya High School	M1 Mining and M8	4	20	1
06-04	Lumen Christi Catholic College	M1	5	13	1
07-04	Bega High School	M1 Rocks, HSC and M5	5	9	1
20-05	Chatswood High School	Core Library Excursion Y12	3	15	2
23-05	Killara High School	HSC Technique	1.5	10	1
25-05	Rouse Hill High School	M5 Fossils and BIFs	3.5	15	2
26-05	Magdalene Catholic College	Core Library Excursion Y11	4	5	1
31-05	Camden Haven High School	Core Library Excursion Y12	5	3	2
02-06	Bede Polding High School	Core Library Excursion Y11	2	10	1
07-06	Cumberland High School	Core Library Excursion Y12	3	2	1
14-06	Presbyterian Ladies College	Australian Gold Conference	3	4	2

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Date	Location	Session Outline	Duration	Number of Students	No. of Educators
17-06	St Andrew's Catholic College, Marayong	M8	3	7	1
17-06	Clarence Valley Anglican School	M5 and M6	2	3	1
20-06	Cherrybrook Technology High School	M8 and M7	4	13	1
21-06	Turrumurra High School	Core Library Excursion Y12	5	7	1
22-06	Illawarra Sports High School	M5 and M6	2	19	1
24-06	Cronulla High School	M1 Mining	2	12	1
24-06	Clarence Valley Anglican School	M7 and M8	2	3	1
27-06	Lambton High School (Newcastle)	M6 revision	1	9	1

Total students for period = 1,115

Project total = 2,683

Standard incursions = 720

Half-day incursions = 317

GSNSW Excursion = 74

Events = 4

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