CoRE
Full STEAM ahead

2025

Pantoro Gold and Norseman CoRE students during their mine

JUNE QUARTERLY REPORT

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CoRE supports the implementation of the CoRE Learning Model and CoRE Games through dominantly Face-to-Face mentoring, training and coaching. The support mechanisms that are in place provide educators with ease to access CoRE's expertise.

03 CoRE Schools and CoRE Learning Model

What developments have occurred with the CoRE Learning Model in CoRE schools? This encompasses the special learning activities, their impact, and the ongoing evolution of the Learning Model.

04 CoRE Highlights and Events

Let's examine recent events, including special celebrations of CoRE achievements, and what lies ahead and the incredible opportunities that bring recognition to CoRE.

05 CoRE Sponsors and Partners

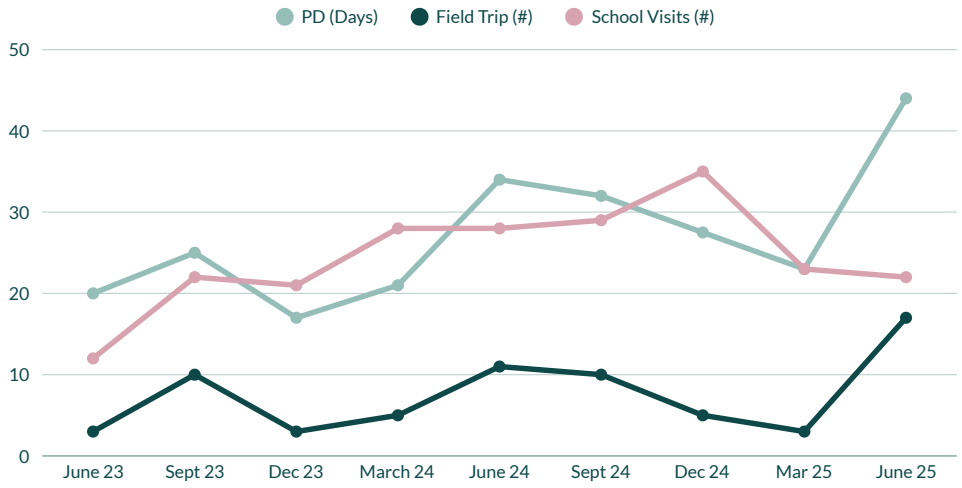
The CLF extends heartfelt gratitude to our Sponsors and Partners for their invaluable support. Their commitment enables us to fulfill our purpose of supporting today's youth for tomorrow's world.

Year 10 Merredin CoRE Students on their Shark Bay Field Trip

EXECUTIVE SUMMARY

Pilbara CoRE Academy Resources Challenge

CoRE- Engagement and Impact



School Visits for Field Trips, Special Events and Professional Development (PD) Days for the CLM:

- Merredin College (x 3)
- Baler PS (X 2)
- Beacon (X 2)
- Bencubbin PS (X 2)
- Norseman DHS (X2)
- Carnarvon Christian School (X 2)
- Calingiri PS (X 2)
- Joseph Banks (X 1)
- Australian Christian College (X 1)
- Bullsbrook (X 1)
- Kent Street (X 1)
- Tom Price SHS (X 1)
- Tom Price Primary (X 1)
- North Tom Price Primary (X 1)

CoRE Field Trip Locations:

- Merredin College
  - Shark Bay
- Baler PS
  - Cemetery Beach
  - Finucane Island
- Beacon PS
  - WA Museum & Curtin University
- Bencubbin PS
  - Marshall Rock
- Norseman DHS
  - Dundas Trail
  - Norseman Gold Mine Visit
- Carnarvon Christian School
  - Gascoyne Delta
  - Banana Plantations
  - Gascoyne River
- Joseph Banks Secondary College
  - Lake Joondalup
- Australian Christian College
  - Lake Clifton
- Kent Street SHS
  - Kalgoorlie
- Tom Price SHS
  - Tom Price Mine Site
  - Karijini
  - Cheela Plains

CoRE- Engagement and Impact

Celebrating the Small Steps

"As a parent of two CoRE children and staff/supervisor on all year level field trips, I say this with the biggest and proudest smile on my face 😀 … I have seen the amazing learning opportunities that are hands-on 'in the real world' our students are fortunate enough to gain. To have Suzy's wealth of knowledge and teaching expertise is an incredible asset for our kids!
To learn while looking at the real thing, touching the real thing, searching for the real thing, out in the real world … makes me feel extremely lucky for my children and our students. CoRE is awesome!"

Mel Wahlsten - Wheatbelt CoRE

Image 1: Mel (second left) has assisted in numerous Merredin CoRE Field Trips and has seen first hand the importance of real world learning and its connectiveness to curriculum.

Reaping the growth of CoRE in Tom Price 2019 - Present -The Pilbara CoRE Academy

The first CoRE_SIP (Science in Practice) field trip for the Pilbara CoRE Academy was conducted at Cheela Plains in Beasley Gorge for their - Pilbara Red PBL. Students went to examine the geological stratigraphy to provide evidence for a Golden Spike Claim for this site to be recognised for its geological significance for recording the Great Oxidation Event (GEO).

"I enjoyed it very much that I could understand and know about the environment around me, and that I could see raw information and proof about each history and events. ***I appreciated the ability to have this opportunity to experience and learn,*** *and liked the rivers and nature. Engaging in the outside environment helped me understand more easily and improved my knowledge of geological and biological events." Thank you very much."*

Ivena Lee Y11 TPSHS CoRE Student

Image 2: The best field trip at Cheela Plains analysing 400 million years of stratigraphy representing the Great Oxidation Event. An Inaugural Field Trip for CoRE_SIP Year 11 at the Pilbara CoRE Academy

CoRE- Engagement and Impact

Baler Primary School - Hedland

"It (CoRE) is different from normal subjects, like math or even music. CoRE takes a different approach to teaching. It is more, in simple terms, fun and the interactive side lets student have a little more freedom in a subject. ***CoRE is a perfect balance of learning and fun."***

Indigo Y6

Image 3: Year 5/6 Baler students undertaking their Town Hall Presentation, the last element for their PBL - 'Pit to Port'

Beacon Primary School - A visit to Curtin University

The students' visit to Curtin University to correlate the meaning of their PBL (Attack of the Asteroids) to science research proved to be a treat. Students spent the day with world leading researchers from Curtin University's - WA Organic & Isotope Chemistry Center, led by Professor Kliti Grice, Curtin's School of Earth and Planetary Science where they engaged in talks and discussion with the Deputy Head - Professor Katarina Miljkovic OAM and Professor Fred Jourdan - Head of Geology and Director of Western Australia's Argon Isotope Facility. Both Katarina and Fred are also with Curtin's Space Science and Technology Centre.

"The kids were a pleasure to have visit. The students were very engaged with the topics we presented, they arrived full of questions, and ready to answer all that we asked them. They displayed a keen interest in the topics we presented them, and was a pleasure to see a group of young students enjoying science! As a group they were very respectful, listening at all times, very well behaved, and importantly excited to learn! ***The kids were a credit to the program, and welcome back anytime."***

– Peter Hopper, Senior Technical Officer, WA-OIGC, Curtin University

Image 4 & 5: Students at WA OIGC (left) and with Lisa from Curtin doing a drilling activity to represent the importance of core for studying the asteroid impact.

CoRE's #therealclassroom

Merredin College

"After much anticipation, Merredin CoRE students have officially moved into their newly renovated STEM lab—an inspiring and purpose-built space designed to enhance hands-on learning, collaboration, and innovation. The impact has been immediate and noticeable. Students have been proudly showing off the space to their non-CoRE peers and sharing how the layout and new features are helping them feel more productive and focused. The new STEM lab isn't just a space—***it's a catalyst for innovation, excitement, and deeper engagement in STEM education at Merredin CoRE***."

Deb Cartwright, Wheatbelt CoRE Co-ordinator

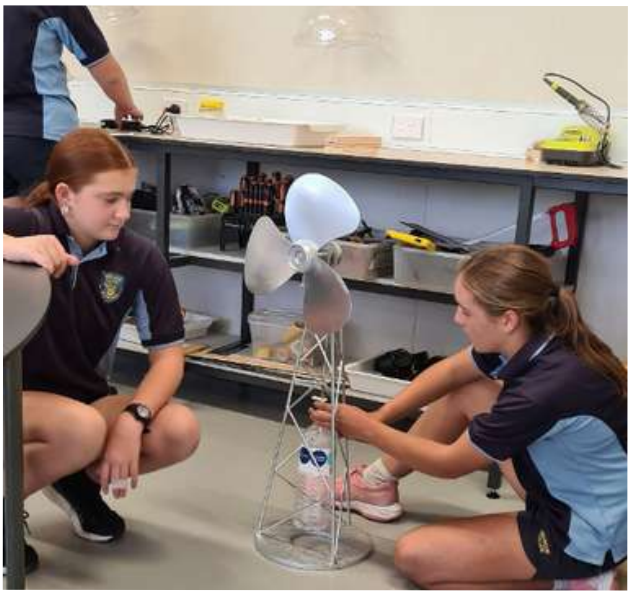


Image 6 - 8: (Left) PBL 1: Deep Sea – The Last Frontier. Students model maintaining homeostasis for 5 minutes, linking it to the effects and pressure on deep-sea divers' bodies. (Right) PBL#1: Water, The Lifeline of Ecosystems and Progress. Students tackle problems faced by Wheatbelt farmers, developing prototypes and systems while applying their knowledge of physics such as forces and simple machines to their ideas. (Bottom) Their new collaborative space.

CoRE #therealclassroom

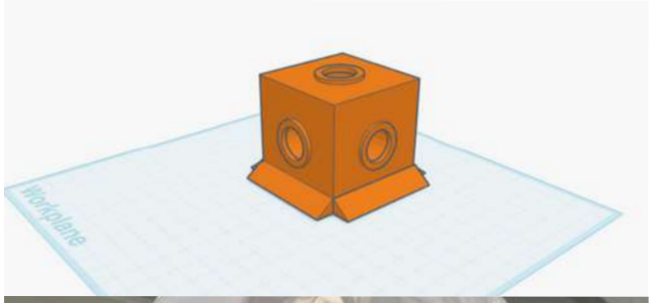
Progress through a PBL - Australian Christian College

For their Year 7 PBL - Martian Invaders....

"The Year 7 class has been investigating the design of a landing device for Mars. Using Tinkercad, they created digital models of their payloads. Several Business Units (BUs) produced innovative and thoughtful designs, some of which are shown to the right. Then the Year 7 students completed the design and testing of their own landing devices, specifically parachutes. This exciting PBL allowed students to apply their understanding of gravity, the differences between mass and weight on Earth and Mars, and the forces involved in motion, including air resistance and terminal velocity.

The Year 8 class has been focusing on the density of various rocks. They have been researching, developing their methodologies, and designing their experimental set-ups. They are now preparing to begin testing their ideas in the coming weeks and this will be complemented by a field trip to Lake Clifton to observe the Thrombolites to understand the connection between these oxygen producing organo-sedimentary rocks and their Rusty Rocks PBL."

Michelle Lastrilla, CoRE Coordinator



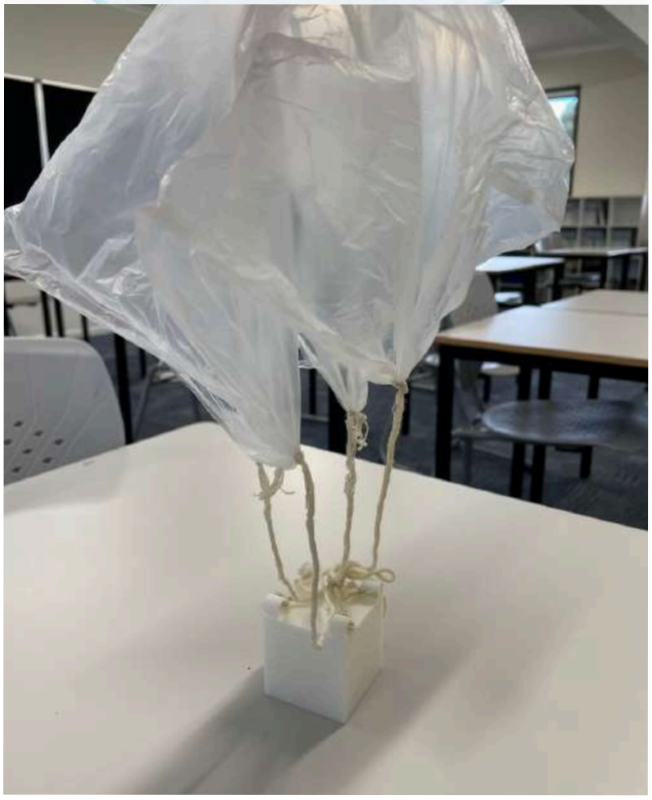


Image 9 & 10: Designing the payload for their Drop Zone PC. The completed Drop Zone machine for Martian Invaders.

Image 11: At Lake Clifton only one of ten sites in the world that contain a microbialite environment. Their ancestors were responsible for rusting the earth's oceans thereby producing iron ore.

CoRE #therealclassroom

Norseman CoRE - trialing a derivation of the CLM

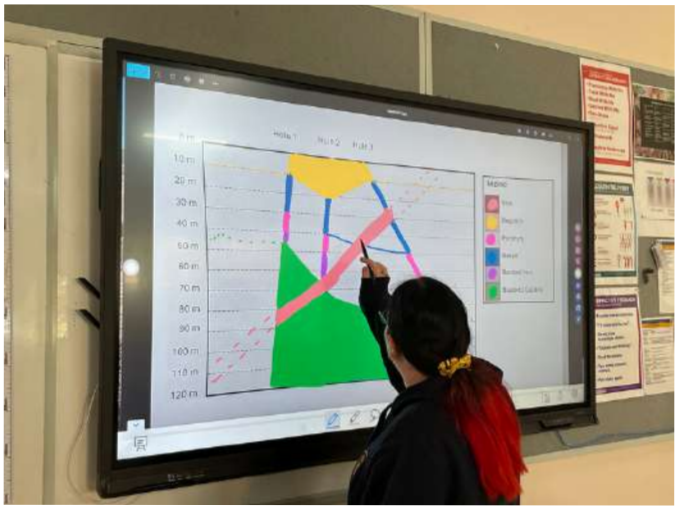
Image 12: Norseman CoRE students understanding the importance of the Dundas Trail & its gold connection

Images 13 - 16: A diversity of learning activities at Norseman Gold Operations

This year at Norseman CoRE, an adaptation of the CoRE Learning Model is being trialed to make CoRE Learning more meaningful and relevant for Norseman students. CoRE's unique PBL is being delivered over four terms, having CoRE blocks/term to finalise the PBL.

The PBL is called - 'A Horse called Norseman', examining the history and the current state of gold mining in Norseman. Their first session explored the Dundas Trail - the history of Gold mining in Norseman.

CoRE's partnership with Pantoro will provide amazing learning enrichment for the students. This was experienced during their second session at Pantoro's Gold Norseman Operations. The day was filled with real world experiences that included the processing plant, Core Yard Geology and a visit to the newly started Princess Royal Open Pit. The second day was a return to school to create a field trip report and consolidate the mine visit with their geological activities. Students truly grasped the concept of lithologies and cross section analysis.



CoRE's #therealclassroom

Image 17: PBL: Malleefowl - Survive and Thrive
Year 4 - 6 students at Merredin College have been exploring the environment that the malleefowl lives in and identifying the elements that these birds need within this environment to survive.

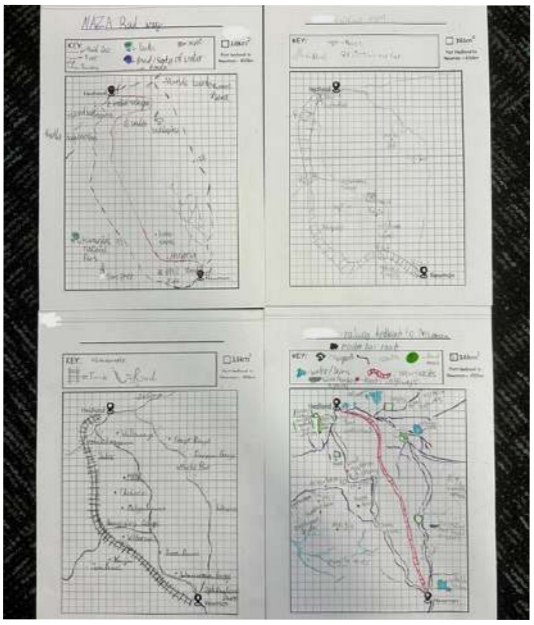


Image 18: Baler Y5 & 6 students developing their new rail line for their Pit to Port PBL from the Heart of the Pilbara to Port Hedland

Image 19: Year 2 & 3 students from Carnarvon Christian School learning through the scientific process for their Fishing the Delta PBL

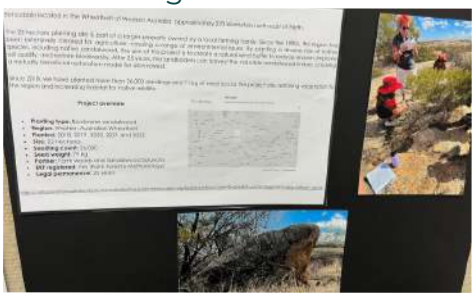


Image 20: A compilation of Bencubbin Y 3 - 6 students of their Mt Marshall Field Trip. The work is on display in the Admin Office

Image 21: Calingiri Y 3 - 6 students from the Wheatbelt are introduced to CoRE Learning through CoRE's immersive and engaging MOR (Measure, Observe, Record) learning strategy to understand the scientific process, to collect data and then to analyse it to make sense of it to identify trends.

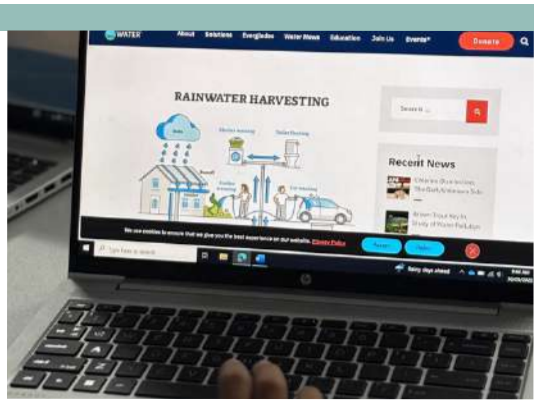


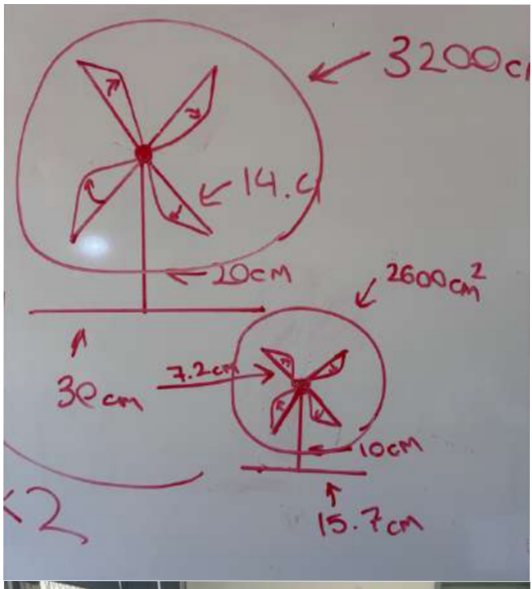
Image 22: Year 7 students from Geraldton CoRE are investigating the sustainability of Geraldton's water supply, focusing on future-proofing strategies. This includes examining the expansion of bore fields and exploring seawater desalination as potential solutions to meet increasing demand. Their work aims to ensure a reliable and clean water source for the community.

Image 23: For their investigation in their Pilbara Survivor PBL, Y 3 & 4 Baler students had plastic bags on branches across the whole school. The investigation focuses on transpiration and the abiotic/non-living of an environment and how it works in the Pilbara.

CoRE's #therealclassroom

Image 24: Year 4/5/6 students from Tom Price Primary have been exploring renewable energy and transport innovation through their exciting PBL - 'Pit to Port. They built solar-powered trains using electrical circuits and Edison robots, then took on the role of marketers by writing persuasive infomercial scripts to pitch their prototypes to Rio Tinto.

Image 25: Beacon CoRE students continued their Asteroid Impact with their investigation, changing the angle of impact to identify the changes in crater shape and size. Using Jelly, flour, sand and golf balls the day was spent MOR to identify the change in the craters as the angle of impact steepened. Was it the same as the killer Dinosaur Asteroid!



Images 28-29: Year 9 students from Geraldton CoRE for their Critically Electrified PBL are actively building wind turbines at the moment to explore factors that optimise blade design. The turbines being built are intended to power mini-grids to demonstrate how small-scale energy generation could be applied in the future. The project highlights the role of rare earth minerals in the green energy transition, emphasising the need for sustainable resource management.

Image 26: Year 7 students from Joseph Banks for their Perth Lakes and Caves PBL visited Lake Joondalup to investigate its water quality.

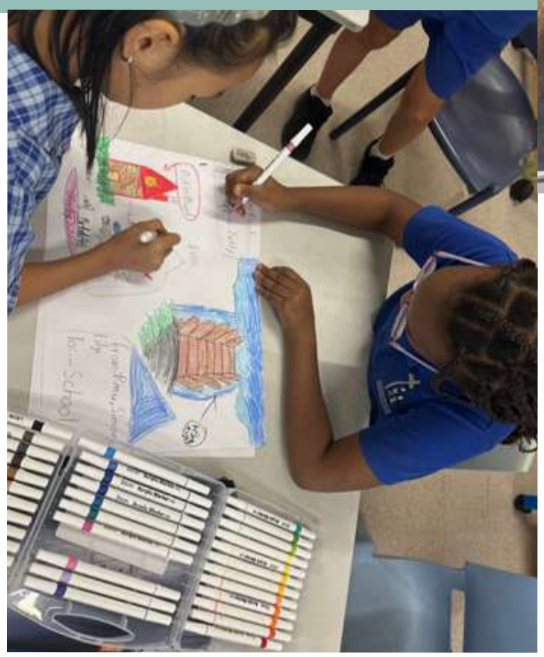


Image 27: Year 1 students from Carnarvon Christian School working on their community resource PC

CoRE - #Fieldtrips

Images 30 - 32: Top At a Banana Plantation, (Middle) on a wharf examining the crabbing trawler, (below) examining the flood level marker at the main bridge over the Gascoyne River.

Carnarvon Christian School

For students from K - 6, three field trips were undertaken to immerse the students in their local environment to develop an understanding of the importance of the Gascoyne River and the industries that it supports.

K - Y1 - For their PBL - Bananaramming the Gascoyne the students studied the life cycle of the Banana Plant and the elements needed to support its existence.

Y2 - 3 - For their PBL - Fishing the Gascoyne, the students visited the harbour and examined the different types of fishing fleet that are used to fish Shark Bay and the diversity of different fish and shellfish that are harvested.

Y4 - 6 - For their PBL - The Flooding Gascoyne, the students explored the levee banks, the previous flood depths and different features of this remarkable 'upside down river' to understand how critical its structure and behaviour is in supporting Western Australia's Food Bowl.

CoRE - #Fieldtrips

Baler Primary School

A field trip to Cemetery Beach for Year 3 & 4 students for their Pilbara Survivors PBL was aimed at students understanding the living and non-living elements that support this unique environment.

For the Year 5 & 6 students for their Pit to Port PBL, a field trip to Finucane Island examined the end of the line for iron ore after its ~400 km long journey from the Heart of the Pilbara to Port Hedland for export.

Images 33 - 34: (Top) Year 3 & 4 students at Cemetery Beach examining their local environment and its elements. (Bottom) The Year 5 & 6 students at Finucane Island counting the Iron Ore Barges parked outside of Port Hedland awaiting to enter the port to load the iron ore from BHP, Roy Hill and Fortescue

Images 35: Bencubbin students sitting on some Tafone Granite Boulders following a session to understand how they were formed

Bencubbin Primary School

Bencubbin CoRE students at Mt Marshall examining Sandalwood trees for their - PBL - 'Almost Training Along. The Beauty of Wheatbelt Sandalwood' Students located Sandalwood trees, identified their location on Google Earth, measured various aspects of the trees to identify any trends and patterns in their distribution with respect to the Granite Outcrop.

CoRE - #Fieldtrips

Images 36 - 38: From Shark Bay various locations to describe its environment and World Heritage significance.

Merredin CoRE - Shark Bay Field Trip

Here is a quick snippet of student feedback from the Merredin CoRE Shark Bay Field Trip.

"I really enjoyed exploring Ellendale Pool and learning about the ***geology***. I felt really engaged. I feel like I bonded with others well and mastered packing up swags. I feel like we gained lots of knowledge, and it ***made me want to engage in science***." Olivia

"This field trip was fun and wonderful as we explored many different sites. A difference I found in this final CoRE Field Trip was the shifting in camping spots since we always camped in one spot. A highlight would be going to Monkey Mia. The site was fun, unique, along with its beautiful scenery to rest my eyes upon. I learnt how to identify galena as well as the history of Australia through observing the rock surfaces. This trip has ***inspired me to appreciate the environment around me***. It has intrigued me more to learn and surround myself with the learning of nature. Nature is truly magical. ***Science is beautiful***." - Sandra

CoRE Highlights & Events
Chevron Graduate Industry Day

The second CoRE-Chevron Graduate Day took place in May at Kent Street, with Chevron Graduates Shaku and Amy visiting Year 8, 9, and 10 CoRE Classes.

CoRE's Industry Graduate Program enables CoRE students to visualise a future career path. For the graduates, it is an opportunity to recognise how the CoRE Learning Model is a way of learning that reflects real-world practices. Below are both Shaku's and Amy's reflections on the day.

Shaku

"The CoRE Learning Foundation equips students with essential skills for both tertiary education and the workplace. The program's structure encourages students to work in smaller groups towards specific goals while also collaborating with other groups to achieve broader objectives, ***mirroring real-world project dynamics***. Observing the Year 8-10 students, I was impressed by their confidence in their skills and knowledge, reflecting the proficiency they have gained through their participation in the project."

Thank you for the opportunity.

Amy

Thanks so much for having us, it was a great experience! Quick testimonial below.

"It was wonderful to see CoRE in action and how non-traditional teaching of STEM can be so much more impactful. I love the overall structure of the program - having students working in groups with specific deliverables, experiencing guided learning from teachers but largely being left to drive their own progress. This is a great way to build independence and accountability for their own learning, whilst developing many other essential soft skills. I was impressed by how well the students were able to articulate what they were working on. ***I found the experiments to be very relevant for the resources industry, and I enjoyed being able to share with students how the experiments translated to real work I complete every day as a mechanical engineer***. It was rewarding to see how that connected some dots for the students and helped them realise the value in their work. I love that the ***CoRE program is not just focused on teaching content, it focuses on overall student development across a range of areas.*** For those planning further study, CoRE will be a great way to bridge the gap of university, where students will be expected to take accountability for their own learning very similar to how they are participating in CoRE today. Regardless of the path students take after school, I think the CoRE program will certainly help them be better prepared for whichever career they choose!"

Image 39: Chevron Graduates Shaku (left) and Amy (right) learning about CoRE during a Year 9 CoRE Class

CoRE Highlights & Events

Pilbara CoRE Academy Spotlight

Images 40 - 41: Year 8 TPSHS students enjoying #therealclassroom at Tom Price Iron Ore Mine to understand how mining will change in the Pilbara in the future

Rio Tinto supporting partner of the Pilbara CoRE Academy provided an enriched mine visit for Year 8 Tom Price CoRE students as part of their Smart Mine 2040 PBL. Students observed open pit mining operations, toured fixed plant facilities, visited the MEM workshop and learned about the GPS and coding software used to run the autonomous fleets at Western Turner. ***The "Pilbara CoRE Academy" at TPSHS is opening doors for our students and their future."*** - Liam Wesson HoLA Science & Maths TPSHS

Approximately 70 year 7 CoRE students studied Dale's Gorge in Karijini National Park to apply their knowledge and understanding of this unique geological environment to their Pilbara Attractions PBL. The PBL focuses on industry diversification around Tom Price, focussing on tourism. The information gained from this field trip will help students to design and engineer tourist attractions such as cable car systems to provide a different perspective for a Karijini Experience. Additionally students learned about the different rock types that form Banded Iron Formations (BIFs), the meteorite layer and the gorge's ecology and the importance of aquifers that support this Pilbara environment.

Image 42: Year 7 students in Dales Gorge

CoRE Highlights & Events

Pilbara CoRE Academy Spotlight

Images 43 - 44: (Left) Students from North Tom Price Primary establishing their open pit at their mine site using tarps and stakes. (Right) Students from Tom Price Primary having completed their open pit construction and finalisation of their ore haul race.

The **Resources Challenge** in Tom Price is an annual highlight. 120 Year 5 & 6 students role-playing as Miners were mentored by 30 secondary school students for CoRE's unique Resources Challenge. There were 4 activities simulating the Iron Ore Pit to Port value chain across 8 mine sites whose names reflect the rocks and minerals of the Banded Iron Ore Formations that define the Pilbara. There were 4 judges from Rio Tinto and the winning team was Limonite.

27 secondary students from TPSHS volunteered to engage in the **Inaugural Hackaton.** The objective was aimed at providing solutions for Pilbara 2050: What would Tom Price and the Pilbara look like in 25 years? Students worked collaboratively in 6 junior and 2 senior teams to improve community life and services for the future of the Pilbara. The teams were judged by representatives from Curtin, Rio Tinto and Pilbara Universities.

The Inaugural **CoRE_SIP** (Science in Practice) Unit 2 for Year 11 students - Pilbara Red - Field Trip to Cheela Plains was amazing. Students undertook field work to gather data to complete the remainder of their unit. **(See section 2 for more details)**

Images 45-46: Year 7 - 11 students engaged in the Hackathon

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Real Science an introduction into geology and mining at Pantoro Gold's Mine Operations

GOT QUESTIONS? CONTACT US.

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