# **Prospect North Primary School**



## Prospect, SA

## Context

Prospect North Primary School is a R-7 site situated in the inner northern suburb of Prospect, Adelaide. The school has a student population of 380 and an ICEAS score of 1038. Approximately 70% of students identify with a non-English culture, 31% are school card holders, 8% are students with disabilities and 9% have an Aboriginal background (as identified on school records).

The school's values are compassion, creativity, curiosity and resilience. They believe students should be connected to the real world, actively problem find and problem solve, understand and be articulate about how and why they learn and be able to set goals and reflectively assess their progress.

Prospect North PS recognised the need to scale their student agency so that all students in the school could have a voice in their learning and co-design the opportunities for the school to grow and change.

They wanted to empower students as skillful communicators and collaborative learners, who would be digitally literate and resilient to face an ever-changing world. The school saw STEM as the vehicle to achieve this through the use of the general capabilities and STEM practices from the STEM Practices for Young Australians Framework.

Serving a complex, multicultural community of disadvantage gave Prospect North PS an opportunity to allow their students to become leaders in this area. Through STEM they would be empowered to be in charge of their own future with the strategies and confidence to overcome barriers and be successful learners.

#### **Project overview**

#### **Issues Identified**

Prospect North PS wanted to develop student agency using the lens of STEM so that all students could have the opportunity to have a voice in their learning and codesign opportunities for the school to grow and change.

#### Vision

Students learn best when they are in control of and understand the learning process. Using students as agents of change, Prospect North PS worked to establish students and teachers as partners, researchers and coconstructors of STEM learning.

#### Actions

Prospect North PS adopted the Design Thinking Framework across the school for all of its STEM learning. Teachers all worked in teams to design and develop learning experiences through STEM and included student voice in the process.

#### Outcomes

Students have used STEM as a way of solving problems relevant to their context. Students from low SES backgrounds, girls, those learning English as an additional language or dialect (EAL/D), and Aboriginal and Torres Strait Islander students, now have higher levels of engagement in STEM through increased classroom and school opportunities.

#### Impact

Through STEM, Prospect North PS now has students leading and contributing at every level. The school's drive for increased student agency has empowered its students to engage with learning and see that STEM pathways and careers are possible futures.





# What happened during the project?

Prospect North PS set out to increase student engagement in design thinking and STEM. The school adopted the Design Thinking Framework as a whole-school approach to large STEM based units of learning. Staff had professional development with global leaders in design thinking, NoTosh, in order to become confident in embedding the process within the classrooms. This enabled learning to be cross-curricular and designed around exploring real world problems.

Through innovative learning spaces and systems, students set their learning goals and work towards achieving them through real-world immersion and small targeted teaching workshops. Design thinking has introduced students to important concepts like prototyping and feedforward as a way for them to take more control over their learning, and increasingly teachers are planning this learning together using design thinking as the structure for co-design.



Digital Leaders was established as a volunteer program for students from Years 2 to 7 who enjoyed technology and exploring how new things worked. The school used a badge-based system to recognise and acknowledge skills and leadership opportunities – and gave leaders bright yellow lanyards to make them visible in the school community.

Prospect North PS has connected students to world renowned STEM enrichment programs and competitions through involvement in First Lego League, Junior Lego League and, most recently, the VEX Robotics Competition. This has provided opportunities for students of all abilities to apply their STEM skills to a meaningful challenge, and to compete against students from all over Australia.

Classes at Prospect North PS are buddied up to work on cross-age STEM projects designed between the two partnered classrooms. This has ranged for designing Sphero games through to creating Scratch-based narratives. This initiative has built connectedness within the school and helped to increase student capacity. These projects provide for multiple entry points, which helps as a low risk option for some of the older students and an extension for some of the younger students. The focus is always on exploring technology with a problem-solving mindset.

The school has led STEM initiatives, including across many sites in SA and interstate, modelling a strong process for fully engaging students in their learning and mentoring other schools to do the same. Via its Kids Teach STEM initiative, students designed, planned and implemented STEM based workshops for visiting partnership schools and this has seen local schools engage in ongoing training and collaboration to put students in the driving seat of whole-school change.

## What changed for the students?

The impact has been immense, through the STEM Lead learning program, STEM 500 and the STEM ambassador cohorts Prospect North PS students have delivered training to all involved. The high agency the students have, has empowered them to be strong community members, to problem seek and then use the Design Thinking process to find solutions and engage with professionals.

Personal investigation is a key ingredient towards Prospect North's goal of student agency; students at all year levels have been given opportunities to explore topics of interest and use resources to design solutions and take action.

For Prospect North PS, having the structures and scaffolds in place to allow students agency in their learning has led to improved wellbeing, attainment and attendance. Unlocking learning for students, teaching them how to learn and be successful, has set alight their passion and drive. The school has seen increased engagement in learning, leadership opportunities and consecutive improvement in wellbeing data for three consecutive years.

Increasing student agency in the learning process was instrumental in transforming learning through STEM at the school. Students regularly articulate their learning through goal setting and teacher conferencing. Digital Leaders have helped to host over 500 teachers and students from SA and interstate through their Kids Teach STEM, SVA school visits and STEM in action conference days. This has meant opportunities for targeted groups e.g. girls, EAL/D learners and Indigenous students, to become confident speakers, role models and high-level STEM learners and teachers.



# "In STEM, we are not looking for the easy answer; we're looking for deeper understanding."

Munjir, student

Digital Leaders have acted as buddies and offered support to classrooms getting technology-based lessons up and running. They have helped to build student capacity, and their presence and availability takes pressure off teachers when using new technology. They have also been great advocates for STEM and the school's learning programs and have provided an opportunity for students to develop self-confidence and pride.

The school's success in the STEM learning opportunities, such as the Lego Leagues, has provided inspiration and helped students feel that they can be leaders and are entitled to be high achievers.

"Student voice is important because it gives students the power to take control and change their learning and give teachers feedback about what they think should change or if they like the way they are learning."

Leyla, student

92%

of students in the Med-High range for Academic Self Concept as per 2019 Wellbeing data (74% in the High ranking). Increase from 2016 results of 80% in the same category (52% High). 45

different students have had the opportunity to present to hundreds of other students, teachers and leaders hosting 5 Kids Teach STEM conferences over the past three years.

#### Where to next?

Prospect North PS plans to continue reaching out and co-creating opportunities for students with parents and caregivers and the wider community. This means building on the school's first parent forum in 2019 to widen parent engagement and work actively on bringing more cultural groups into a closer relationship.

Prospect North PS identified their involvement in The Connection as invaluable to their growth and intends to continue their connection to the wider SVA community to build on their success from the Kids Teach STEM conferences. Development of this initiative to network with SVA schools in an online environment as part of TMB STEM Professionals Pilot, is a high priority for the near future.

School leaders are also looking at a focus on how digital technologies are taught in the future, in order to empower student learning through the strategic use of video, online spaces and digital platforms at a higher, more productive level.

Following a successful partnership with a CSIRO STEM professional, Prospect North PS will be looking for further expertise in this area to add to STEM learning for students.





## **Key Insights**

Prospect North PS learned the following were important for success:

- Authentic audience From the Kids Teach STEM conferences to hosting educators from SVA or outside of South Australia, to presenting to the local Rotary Club, a wide range of students have had the opportunity to talk about their learning, share their insights and develop their leadership skills.
- Empowering students Student engagement with their learning increases in proportion with the amount of agency they are afforded. To this end, Prospect North PS actively continues to work on co-creating and codesigning learning, and will partner this with exploring what co-assessment can look like.
- Real-world problem solving Focusing on STEM practices and authentic problems has raised the quality
  of STEM based inquiries. Using the Design Thinking Framework across the school has enabled students to
  deepen their learning and contribute both collectively and individually.
- Common vision It was of critical importance for both leadership and staff to believe in the power of student-driven learning. An expectation from all staff that all teachers will work in teams was a precondition to success.
- A further factor for success identified by leaders, was the assumption that students can and will "step up" to pursue their personal best if the other pre-conditions are in place.

#### The importance of collaboration

#### **Q&A** with the School Principal Marg Clark

#### Q: What has made SVA a productive partnership for your school?

Our partnership with SVA has allowed us to think deeply about our practice and learn from other schools to discover, prototype and scale up best practice for our context.

Through real-world problem solving and an enquiry approach to learning we have developed skillful communicators, collaborative problem finders and solvers who are digitally literate and resilient.

To enable this to happen, we have established students and teachers as partners, researchers and coconstructors of learning.

We look forward to continuing to network at all levels to create a school that allows our children to flourish.

# Q: Outside of SVA itself, what has been the most productive partnership you've developed through your SVA project? Why has it been productive?

As part of our STEM enrichment, two of our student leaders from our First Lego League robotics team have helped to develop a relationship with the Rotary Club of Prospect.

This has led to a partnership where not only do Rotary help with financial sponsorship of our teams but offer our students an opportunity to present to their club at Youth Leadership dinners about their progress and meet other inspirational youth leaders.

Students have learned about the reciprocal nature of sponsorship and have drawn confidence from the interaction with other interested adults. Rotary's community service purpose has also influenced our students to reach out beyond the school to help other schools get started in First Lego League and get their teams up and involved.



# Contribution of another school to your journey

Prospect North PS have adopted Merrylands East Public School's no bells approach to the start and finish of school days and breaks. This has shown to be effective for calmer transitions and reduced anxiety amongst students.

The school has been influenced by the work of Granville East Public School and Curran Public School in their work using Spirals of Inquiry as a model for school improvement.

Visiting Wallarano Primary School provided inspiration around the design of learning spaces – in particular their tinker shed.

From the Hunter Valley Thought Leadership Gathering in 2018, Prospect North PS leadership were introduced to the work of the Education Endowment Foundation (UK), which has given us leads to follow up on in the area of student self-regulation.



# bid your models work perfectly the first ime or did you need to make charges?

# The use of Samsung Technology

The school utilised the Samsung S7 phones with its VR, Gear Fits and with apps such as HP Reveal. HP Reveal is an augmented reality app which allows users to create a trigger image (similar to a QR code) that initiates a video or another image to be displayed. The school applied this app in classrooms and also during an "Amazing Race" for their GATs cohort.

The amazing race was held in Sydney. Students had to decipher clues and information in order to identify historical landmarks or places of interest around the city. Trigger images were created of these landmarks which initiated a video or photo that gave information regarding the next clue. Not only did this app serve a logistical purpose, for example, it replaced the need to leave solid objects or paper clues in a public place which could have been removed, but it also allowed for tailored content and increased student engagement.

The Samsung partnership has also provided opportunities to receive training in the technology they provide. This has allowed staff to think widely about how to apply the technology to various educational settings and create innovative curriculum.

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