STEM: Innovation beyond the classroom

Building a future for science

Future-focused design-based learning in Years 7 and 8

Engineering without boundaries
Jasmin Goldberg

Music bringing our School community together

Junior School Encouraging curiosity and creativity through STEM

Howqua highlights 2019

STEM in early childhood

Sport Using technology to track fitness

Arts and the FabLearn Lab
STEM: Innovation beyond the classroom

What knowledge, skills, values and experiences will young people need to thrive in a rapidly changing world?

This is a question that educators are considering around the world, and at Lauriston we lean towards the view that to best prepare students for the changes brought about by AI and other global trends, schools will need to set students up for lifetime education, to be empathetic, comfortable with change, and to have the capacity to critically engage with new technologies. (Education Future Frontiers: Opportunities and Challenges for Education Discussion Paper 2.)

We understand that the world in which we live is rapidly changing and the skills required of those entering the workforce both now and in the coming years make it a priority for young people to understand the building blocks of computation and to engage with technology and its implications. Young people will need to have the skills to evaluate information, and to understand how machines make decisions, the choices embedded in computer code, and the privacy implications arising with every technological development.

Connected to the need for explicit attention to digital literacy is the need to consider the level of attention we should be giving to ethics and philosophy. The more research that I read, the more I understand that teaching STEM (science, technology, engineering and mathematics) subject disciplines goes hand in hand with teaching those 21st century skills or capabilities which are spoken about broadly in education and business, but have not all been clearly defined and are problematic to measure and assess in a school-based setting.

‘Too often we give children answers to remember rather than problems to solve.’ Roger Lewin

Skills our 21st century students need

- High levels of functional literacy and numeracy.
- A deep understanding of the core concepts in the subject disciplines, including higher levels of digital literacy.
- The opportunity to apply knowledge in meaningful ways and develop mastery in both content and capabilities.
- The mindsets and strategies to be adaptable and resilient learners, to reach their goals and continue to learn.
- To be well-rounded, informed and culturally aware citizens who are able to positively engage in an increasingly interconnected world.
There is a growing breadth of research around the 21st century skills/capabilities and a number of reports from our Australian universities and business corporations. The 21st century skills/capabilities generally fall under the following categories: critical and innovative thinking, interpersonal skills, intrapersonal skills, global citizenship, and media and information literacy.

I would contend that a number of these skills/capabilities can be fostered by integrating digital technologies and digital fabrication learning activities into our curriculum.

For example, over the last four years our Years 7 and 8 students have been involved in a number of learning activities which we have called ‘We have an opportunity’. We have invited students and their teachers from a number of local and Australian girls’ schools to join us for these projects. We have had students working with people who have disabilities to design and prototype products which will make their daily lives a little easier; in 2018, the student groups worked on the design and prototyping of products that would help individuals or groups in their schools.

The ‘We have an opportunity’ projects bring girls together for a social purpose as they work through the design thinking process. Working in a group over an extended time period provides an opportunity for the girls to collaborate with each other and develop an appreciation for the personal strengths each brings to the group.

These types of activities enable girls to better understand that STEM-focused careers are accessible for them.

Our digital fabrication laboratory (FabLearn Lab) has been in place at Lauriston since 2013. Our intention through digital fabrication and making was, firstly, to determine ways in which we could further develop the experiential or ‘hands-on’ learning activities for our students, and secondly, consider how we might address the concern that girls are less likely to choose tertiary studies and careers related to STEM.

The FabLearn Lab has become an important cross-disciplinary learning space for students from Prep to Year 12 and has helped them to engage effectively with STEM. The use of digital fabrication has been embedded in a broader Digital Intent strategy, which we have documented.

In 2019 our Junior School students have been involved in a number of STEM-integrated activities that focused on design process and production skills. These included coding a story about a number (Prep), designing and prototyping a fairy house (Year 1), designing an algorithm for Dash robot to push and pull a toy (Year 4), designing and creating a website for a small business (Year 5) and designing a warning signal for a natural disaster (Year 6). See more about these activities on page 20.

In Years 7 and 8 our students each participate in four-week-long intensive programs across the year; two with a focus on digital fabrication and two with a focus on digital technology. Our Year 9 students continue with a digital technology program, which has a current focus on coding. Our Year 10 students have access to semester-based electives which have a digital fabrication or a digital technology focus.

We offer a broad range of co-curricular activities to our students, which include Robocup, Coders and Makers Club, Lauriston Start-up Entrepreneurs Group, the RACV Solar Challenge, AI for Good Challenge and Spaghetti Machine Challenge. We are always looking for new opportunities for our students and in 2020 we will continue our development of an entrepreneurial think tank for our students and continue our current initiatives.

We are confident that when girls are provided with opportunities from the early years of Junior School to develop their understanding and skills in STEM-related subject disciplines, they will continue with the study of these areas as they move through the School. Our girls need to develop positive mindsets and hands-on skills from their early years, which in turn will help their self-confidence and desire to ‘take risks’ in their learning, particularly in science and mathematics.

We believe that an integrated approach to STEM-related activities enables our girls to participate in ‘real-life’ activities and practise the transfer of skills to different subject disciplines. We want our girls to believe in themselves and their ability to undertake science and mathematics subjects in their senior years of school. The ‘bottom-up’ approach we have chosen by working to engage our students in STEM from the early primary years is aimed to continue to build the interest and confidence of girls in approaching all STEM-related subject disciplines.
Maths, the unsung hero

There are now a huge range of inspirational STEM programs run by both educational institutions and industry, with the aim of increasing student interest in these technical disciplines.

Many of these programs, however, while inspiring, educational and fun, often overlook the core mathematical foundations that these technical subjects share. As a result, students choose to pursue a higher-level STEM subject, but quickly become overwhelmed by the mathematical aspects and, in the worst-case scenario, opt out of this career pathway.

Although the level of mathematical ability does vary across disciplines, student success in STEM is highly dependent upon their knowledge of, and interest in, analytical skills. Children and young adults are naturally curious, so our aim at Lauriston is to instil an interest in the versatility of mathematical literacy at an early age and show how it can be applied to real-life scenarios. The latter is particularly important in creating interest in STEM beyond school studies.

Our Year 7 Extension Maths class was eager to take on the challenge of addressing this conundrum and pioneering some new classroom tasks. The two tasks applied their linear graphing skills in unfamiliar scenarios and presented the students with a very different kind of problem to those they were used to dealing with.

The first task required various brands of Jelly Snake lollies to be stretched by adding suspended weights, and then recording the extension. This real data produced a linear trend, which was then graphed, and associated questions were asked based on what had been previously covered in class. The second task then used the graphing website ‘Desmos’ to recreate the outline of a supplied photograph by working out the functions of each required line. Linear equations were essential, but students were also encouraged to explore other functions beyond what had been specifically taught.

Both tasks presented an appropriately challenging level of mathematical skill. The real-life data in the Jelly Snakes task was not perfect, and trial and error was encouraged in developing the Desmos image. The tasks were also specifically chosen to integrate non-maths STEM subjects, specifically science with the Jelly Snakes task and technology with the Desmos task. In doing so, we hoped to emphasis to the students how critically intertwined their mathematical abilities are, and that the STEM subjects are not four isolated areas.

For students who are planning to pursue STEM as a career, a sound mathematical foundation is something which cannot afford to be overlooked. By introducing tasks into Maths at Lauriston, which students would typically associate with other subjects, and by making these tasks more relevant to real-life applications, we hope to highlight the intertwined nature of the ‘M’ in STEM and encourage an ongoing interest in this pathway.

TEACHER INSIGHT

ZARA DENNIS
DIGITAL FABRICATION LEAD TEACHER, SCIENCE AND MATHEMATICS TEACHER

The acronym STEM originated in the 1990s. Its popularity has increased significantly in recent years in response to both employer demand and projections that around 75% of the fastest-growing occupations will require STEM skills.

There are now a huge range of inspirational STEM programs run by both educational institutions and industry, with the aim of increasing student interest in these technical disciplines.

The acronym STEM originated in the 1990s. Its popularity has increased significantly in recent years in response to both employer demand and projections that around 75% of the fastest-growing occupations will require STEM skills.

Although the level of mathematical ability does vary across disciplines, student success in STEM is highly dependent upon their knowledge of, and interest in, analytical skills. Children and young adults are naturally curious, so our aim at Lauriston is to instil an interest in the versatility of mathematical literacy at an early age and show how it can be applied to real-life scenarios. The latter is particularly important in creating interest in STEM beyond school studies.

Our Year 7 Extension Maths class was eager to take on the challenge of addressing this conundrum and pioneering some new classroom tasks. The two tasks applied their linear graphing skills in unfamiliar scenarios and presented the students with a very different kind of problem to those they were used to dealing with.

The first task required various brands of Jelly Snake lollies to be stretched by adding suspended weights, and then recording the extension. This real data produced a linear trend, which was then graphed, and associated questions were asked based on what had been previously covered in class. The second task then used the graphing website ‘Desmos’ to recreate the outline of a supplied photograph by working out the functions of each required line. Linear equations were essential, but students were also encouraged to explore other functions beyond what had been specifically taught.

Both tasks presented an appropriately challenging level of mathematical skill. The real-life data in the Jelly Snakes task was not perfect, and trial and error was encouraged in developing the Desmos image. The tasks were also specifically chosen to integrate non-maths STEM subjects, specifically science with the Jelly Snakes task and technology with the Desmos task. In doing so, we hoped to emphasis to the students how critically intertwined their mathematical abilities are, and that the STEM subjects are not four isolated areas.

For students who are planning to pursue STEM as a career, a sound mathematical foundation is something which cannot afford to be overlooked. By introducing tasks into Maths at Lauriston, which students would typically associate with other subjects, and by making these tasks more relevant to real-life applications, we hope to highlight the intertwined nature of the ‘M’ in STEM and encourage an ongoing interest in this pathway.

TEACHER INSIGHT

ZARA DENNIS
DIGITAL FABRICATION LEAD TEACHER, SCIENCE AND MATHEMATICS TEACHER

The acronym STEM originated in the 1990s. Its popularity has increased significantly in recent years in response to both employer demand and projections that around 75% of the fastest-growing occupations will require STEM skills.

Although the level of mathematical ability does vary across disciplines, student success in STEM is highly dependent upon their knowledge of, and interest in, analytical skills. Children and young adults are naturally curious, so our aim at Lauriston is to instil an interest in the versatility of mathematical literacy at an early age and show how it can be applied to real-life scenarios. The latter is particularly important in creating interest in STEM beyond school studies.

Our Year 7 Extension Maths class was eager to take on the challenge of addressing this conundrum and pioneering some new classroom tasks. The two tasks applied their linear graphing skills in unfamiliar scenarios and presented the students with a very different kind of problem to those they were used to dealing with.

The first task required various brands of Jelly Snake lollies to be stretched by adding suspended weights, and then recording the extension. This real data produced a linear trend, which was then graphed, and associated questions were asked based on what had been previously covered in class. The second task then used the graphing website ‘Desmos’ to recreate the outline of a supplied photograph by working out the functions of each required line. Linear equations were essential, but students were also encouraged to explore other functions beyond what had been specifically taught.

Both tasks presented an appropriately challenging level of mathematical skill. The real-life data in the Jelly Snakes task was not perfect, and trial and error was encouraged in developing the Desmos image. The tasks were also specifically chosen to integrate non-maths STEM subjects, specifically science with the Jelly Snakes task and technology with the Desmos task. In doing so, we hoped to emphasis to the students how critically intertwined their mathematical abilities are, and that the STEM subjects are not four isolated areas.

For students who are planning to pursue STEM as a career, a sound mathematical foundation is something which cannot afford to be overlooked. By introducing tasks into Maths at Lauriston, which students would typically associate with other subjects, and by making these tasks more relevant to real-life applications, we hope to highlight the intertwined nature of the ‘M’ in STEM and encourage an ongoing interest in this pathway.
BUILDING A FUTURE FOR SCIENCE

‘Science is fun. Science is curiosity. We all have natural curiosity. Science is a process of investigating. It’s posing questions and coming up with a method. It’s delving in.’ Sally Ride, NASA astronaut.

Science is everywhere in today’s world. It plays a crucial role in so many aspects of our lives and Lauriston students are presented with many opportunities not just to learn scientific concepts in the classroom, but to experience it in its many forms in wider society.

During Science Week in August, students were privileged to hear from Dianne McGrath, Mars One astronaut candidate, environmental engineer and founder of Watch my Waste research. Dianne has a particular interest in not only being among the first people to travel to Mars, but also in minimising food wastage. As well as sharing her journey through the Mars One selection process, Dianne challenged the students to reimagine a society where we could start over – and consider what we would do differently. Year 8 students were able to talk with Dianne in more detail as she worked with them to plan and build a habitat for the moon.

As part of the Science program at Lauriston, students have the opportunity to work with practising scientists and engineers. Year 7 students worked with Engineers Without Borders (EWB) to build water filtration systems using basic materials. As part of this exercise, students had to consider the challenges faced by countries with limited ability to source materials. The engineering students also discussed the very important aspects of engineering and the crucial role it plays in society.

Senior Science students have been able to put their knowledge into practice by visiting laboratories at universities. Year 12 Chemistry students have taken part in an instrumental analysis workshop at Melbourne University to identify unknown organic compounds. Biology students have investigated evolution, diversity and classification at Melbourne Zoo, and also worked alongside a number of talented and inspirational scientists at the Gene Technology Access Centre to identify the pathogen involved in influenza epidemics using a range of sophisticated equipment and DNA manipulation techniques. They have also introduced the use of genetic engineering equipment in the classroom to transfer genes from one species to another.

Students are able to take up opportunities for extension through a range of competitions, STEM workshops and holiday programs throughout the year. We have had students attend the National Youth Science Forum and the Australian Science Olympiads Summer School, both of which require students to be specifically selected from a range of candidates. The NASA International tour to the USA provides an opportunity for students to experience astronaut training at Space Camp, as well as visiting a number of other organisations that are world leaders in engineering, innovation, technology and other STEM fields.

Science is constantly growing and evolving, and so too is the Science program at Lauriston. Students are able to create their own research questions, work in collaborative groups, conduct their own experiments, make mistakes, and learn from them; and even draw connections between multiple subjects. Partnerships with industry and universities are being developed, and connections are being made with practising scientists so that students can work with those who make a real difference to so many aspects of society.

TEACHER INSIGHT

SUE FRYER
ACTING HEAD OF SCIENCE

‘Science is fun. Science is curiosity. We all have natural curiosity. Science is a process of investigating. It’s posing questions and coming up with a method. It’s delving in.’ Sally Ride, NASA astronaut.
STUDENT INSIGHT

Year 12 reflections

We spoke to five students about their Lauriston experience and how it has prepared and shaped them for the future.

Lier Deng (School Co-Captain)

I’ve had the incredible opportunity of leading the Senior School and the Year 12 cohort alongside Lara Bennett throughout 2019. Looking back, it seems crazy to think about everything that has happened and how fast the year has flown by. One of the most memorable moments this year was when we travelled to Sydney for a leadership camp, where we not only met so many other incredible school captains, but also established our School theme for the year: Ohana (family). Some other memorable moments consist of us coming up with our iCarly rip-off identities for our student assemblies, gathering the 2019 leaders for our High School Musical-themed introductory video, and organising the Year 12 Fair. However, my personal favourite has to be recruiting teachers for a surprise ‘Greatest Showman’ dance act for the Term 2 Talent Show; observing their amazing dance rehearsals has to take the cake!

Being School Captain has not always been easy – at times it was difficult to balance with the demands of Year 12 – however, it has always been heaps of fun and extremely rewarding. To say I am eternally grateful to have been given this opportunity is an understatement. I have learned that leadership is not only about implementing the changes which you want to see, but to guide and help others reach their full potential by equipping them with the right tools to do so. It has been an honour being able to do that and to fuel the drive that is so clearly within all the girls in our Lauriston ohana.

Carmen Umbers

I started at Lauriston in Year 4 (2011) and have made the most of the incredible breadth of sport, music, drama, and community service activities on offer. Howqua was a highlight of my time at Lauriston, where I developed great friendships and numerous skills including leadership and resilience. I was a Prefect and Hockey Captain in my final year, rowed at three Head of the Schoolgirls events, and have been nominated as Lauriston’s representative for the Australian Olympic Change-Maker Award 2019. I played the trumpet in the symphonic band and orchestra and have also taken part in a number of school drama performances, both acting and backstage. I was recently awarded my Gold Duke of Edinburgh, for which I have completed a year of community service at Friday Night School, which I have found really rewarding. I travelled to Ecuador, a World Challenge trip, and also had the privilege of going to Noonkanbah and spending a week in the community. Both experiences were unforgettable. I have a particular interest in visual communication and media and hope to pursue this beyond school.
Cassie Rozental

I began my schooling at Lauriston in Year 3 as an elite gymnast. Being at Lauriston allowed me to combine my education with 36 hours a week of intensive training at the Australian High Performance Centre. I retired from gymnastics in Year 8 and became more absorbed in the full experience of Lauriston life. My year away at Howqua was life-changing. It was a unique opportunity to live away from home in a totally different environment and I made many strong friendships that will last a lifetime. Lauriston has provided me with diverse opportunities like debating and philanthropy, and sports such as rowing and skiing. I have been able to study a wide range of academic subjects and have discovered a passion for commerce subjects. The teachers have been incredibly supportive and always encouraged me to aim for a high level of excellence. VCE has been a challenging year with a high degree of personal growth, but I know that the learning environment at Lauriston has made this possible. I look forward to moving on to university to study in my chosen field and I am grateful for the incredible foundation that Lauriston has given me.

Sam Eade

(Sport Co-Captain)

The experience that Howqua gave me allowed me to build my resilience and show me what it’s like to explore life outside of my comfort zone. Since then I have felt encouraged to put myself in positions of fear such as applying for Sport Captain or going on the Borneo trip. I have also learned to shape my future decisions without concern of what my friends are doing or whether or not I will be in their group as I learned through Howqua, sometimes the best experiences can be discovered on your own with new people. This has resulted in my continuation of participation in sports such as rowing when none of my friends were doing it, but this meant that I met new friends and was able to have new experiences with these people. Howqua showed me the importance of finding and doing the things that make you happy and since then this has helped me in my subject choices as well as my extracurricular activities. After school, I would like get in to an acting course at either Victorian College of the Arts or NIDA in Sydney. Failing that, I will continue to pursue and explore my love of sport and exercise in Deakin’s sports, exercise and nutrition courses. I have always been a part of sport at School and learning about sports science in PE at School has sparked a curiosity in discovering how it can be applied to everyday life as well as high-level sport.

Angela Gao

I have most enjoyed the relationships that I have built throughout my time at Lauriston, whether it is my friendships with my fellow students or with my teachers. Lauriston students come from a range of different backgrounds and many girls have had previous experience of living overseas. Howqua offered an incredible opportunity for me to experience living independently with nine other girls. Through understanding how to compromise in a group situation and how to communicate to resolve conflicts, I am now better prepared for life beyond school where I will meet many people who come from different backgrounds. I aspire to be a world citizen and wish to travel and work in various different countries around the world. For me, Lauriston’s strongest feature is the opportunity that is offered here. We were exposed to so many opportunities, ranging from Howqua to the International Baccalaureate (IB) program, and these truly prepared us for our future. One other advantage of being at Lauriston is the small class size. This environment enables more one-on-one support from the teachers, who are incredibly caring and professional, and I have developed both as a learner and as a person through their guidance.
How might we design and deliver programs that equip our students with the skill sets, tool sets and mindsets to live and work effectively in a future with increasing technological ubiquity and empower them to make a positive impact in the world?

One way in which we are trying to address this challenge is through our Signature Projects, design-based learning activities where students are challenged to work through a design thinking process to identify an opportunity or problem, and design and create a solution.

In Years 7 and 8 our students complete two signature projects. These projects are intensive four- to five-day experiences where the normal timetable is collapsed, allowing students to work solely on the challenge.

The projects each have their own specific theme, are interdisciplinary and seek to address contemporary and emerging issues. All projects are collaborative in nature and in addition to the skills acquired while working through a design process (for example, ideation and prototyping strategies), students also practise creativity, communication, critical thinking, entrepreneurship, digital literacy, digital citizenship, empathy, flexibility, inter- and intrapersonal skills and resilience.

While either a digital or physical product is the visible outcome of the projects, we focus on the actual process. A key message we try to inculcate during these projects is to ‘embrace the ambiguity’. What this means is that when students work through their project, we don’t quite know what the next step will look like or how their idea will pan out, so we can’t always offer support. The best course of action here is to try, perhaps fail, and then learn from that failure.

We hope that the projects inspire the students to be opportunity finders and problem-solvers. To be creative, deal with failure and, of course, embrace the ambiguity of it all! 💪
Year 7 Signature Projects

Robotics, Artificial Intelligence and Ethics

In this project, students are challenged to design and prototype an Artificial Intelligence solution that will solve a problem relating to accessibility, Earth (environment) or humanitarian issues. Students have the option of submitting their idea to the AI for Good Challenge, a national competition run by Education Changemakers in partnership with Microsoft (https://aiforgood.com.au/). Students also learn to program a robot/autonomous vehicle to complete a number of challenges such as parallel parking, following a path, navigating an intersection and modifying movement based on signals. They learn to code a chatbot and a virtual pet. Students develop an understanding of the importance of ethics with respect to technological development.

Toys alive

Students design and create an automata (a moving mechanical device made in imitation of a human being or animal) of an endangered animal. Students have the opportunity to use Adobe Illustrator to create a vector design of their automata components, which are then cut on the laser cutter in the FabLearn Lab. This technology allows for rapid prototyping. Assembly of the automata also allows students to access hand tools. Students are allocated ‘Lauriston’ money which they use to purchase material to dress their automata to improve its aesthetic. As a team they must negotiate together how the money will be spent. They also develop and deliver an elevator pitch to their class. A supporting session run by LOTE is translating product information to an international market.

Year 8 Signature Projects

Game On

Students design and create a tabletop game based on one of the United Nations’ sustainable development goals. The game must incorporate a physical technology in some creative way and to address this the students learn to code a micro:bit (a pocket-sized programmable computer). They learn how to prototype simple circuits to connect the micro:bit to both input sensors and outputs, such as lights or motors. A professional designer is invited in to speak to the students about her process of finding design inspiration and how to create a brand. This supports the students as the project requires them to design and create branding and packaging for their games. Students may choose to use the laser cutter to create elements of their games and a number of hand tools are available for construction.

I am Brave

The aim of the ‘I am Brave’ project is to design and prototype a digital solution (mobile application, website or video game) to help educate Years 5 and 6 Lauriston students about a digital citizenship issue. Year 8 students use real survey data of Years 5/6s’ online habits to find an opportunity to create a solution. Each team selects the best platform to create their digital solution. They can learn to code either a website using HTML and CSS, a mobile app using AppLab or MIT app inventor, or a video game using Scratch.

The project culminates in an exhibition of digital solutions where the Years 5/6 students are invited to test and provide feedback on the digital solutions.

We Have an Opportunity

This is an extra-curricular opportunity open to students in Years 6, 7 and 8. It is a three-day workshop where teams work through the Lauriston design thinking process to develop a solution to solve a problem in their community.

In 2017, students worked in small groups to design and create a solution for a client who has a disability and involved Lauriston students working in teams with students from other schools.

In 2018, we invited teachers and students from Fintona, Korowa, St Michael’s Collegiate, Mentone Girls, Ivanhoe Girls, Wilderness School and MLC to join us to learn about a range of digital tools and use the Lauriston design thinking process to create their solution.
For as long as she can remember, Jasmin Goldberg has been fascinated by how and why things work. In the six short years since she walked out the Huntingtower gates for the last time, she has taken huge steps towards encouraging future changemakers and pioneering humanitarian engineering.

‘I loved making things and was intrigued by the early innovators – anyone who has invented something fascinates me. I remember as early as Year 6, when we were given the opportunity to do a project and I chose: “Inventions that shaped the world”.

At Lauriston, Jasmin pursued her love of mathematics and design, studying VCE Maths Methods, Chemistry and Biology, and complementing this with Visual Communication and Design, English and Legal Studies. She graduated from Lauriston in 2013 in the top 1% of her cohort with an impressive 98.75 ATAR and is now completing a Masters of Architectural Engineering, a new course offered at Melbourne University in 2017.

‘Design and maths were my favourite subjects at School, as well as my strengths. I am currently finishing a Master of Architectural Engineering. Historically, these disciplines have been seen as very separate in the industry. This course confirms my belief that the most sustainable and often innovative solutions come from the blurring of these two disciplines.’

Jasmin was the recipient of the Dean’s Honours Award for outstanding achievement in 2014, 2015, 2017 and 2018, the Melbourne School of Engineering Foundation Scholarship, the Melbourne Global Scholar’s Award, the University of Melbourne Transition Scholarship and the Dean’s Art Award for Visual Communication.

Despite these accolades, Jasmin realised early on that life is not just about academic excellence. She was Head of Boats at Lauriston, a recipient of Full Colours, and participated in many of Lauriston’s extra-curricular activities.

‘I enjoyed the opportunities to do extra-curricular things such as GSV sport or the history trip to Turkey – and especially Howqua – to provide balance and enrichment to the academic side of things and to really get involved in the School community. Charity work at Lauriston really encouraged me to open my eyes to possibilities. I felt a strong need to do things other than just academic study while at Lauriston, and I was seeking a similar outlet at university.’

Jasmin found this outlet when she began volunteering as Chapter Secretary for Engineers Without Borders (EWB) at the University of Melbourne. EWB’s philosophy is based on a community-centred approach, using its engineering knowledge and resources to bridge self-identified gaps in access to community health, wellbeing and opportunity.

‘I believed that one of the best ways to contribute to making this vision a reality was to be part of an organisation who are passionate about using engineering to make a better world. I was so inspired by the work we did that I wanted to contribute more. I was also drawn to the community and being able to engage with like-minded people from all over the globe.’

In February this year, Jasmin attended the Humanitarian Design Summit in Cambodia with EWB, to offer engineering solutions for an island community in the Mekong.

Recently, Jasmin travelled to Indonesia with two other Old Lauristonians, Annabelle Roper and Yvonne Yang, as
part of the Melbourne School of Design travelling studio. They explored informal living in the kampungs of Bandung to understand the community spirit that is beneficial in such living arrangements, and offer creative solutions to improve living conditions. These travelling studios encompass a number of disciplines to find solutions for complex, real-life issues.

EWB also works a lot locally with school outreach programs, inspiring students to pursue STEM and demonstrating that engineering is not just the overly technical thing that most people assume, but that it is also about people, problem-solving and can be fun and hands-on.

From 2017, Jasmin volunteered as an EWB Regioneering Roadshow Team Leader, where she leads and runs engineering workshops at rural and under-represented schools in the Gippsland, Bendigo, Ballarat and Echuca regions. The workshops aim to encourage the students – particularly females – to study engineering at university. There is a particular focus on encouraging females.

‘Engineering is relatively male dominated. I would love to see this change and see more women in leading roles within the engineering sector.’

At Lauriston, Year 7 students worked with EWB to build water filtration systems using basic materials. They had to consider the challenges faced by countries with limited ability to source materials. The engineering students also discussed the very important aspects of engineering and the crucial role it plays in society.

While completing her master’s, Jasmin is also working as an undergraduate engineer at XLam, a leading mass timber solution provider to the Asia Pacific region.

‘My job has been quite an exciting journey. XLam was the first manufacturer of cross-laminated timber (CLT) panels in the Southern Hemisphere, and there are a lot of opportunities for research and design innovation.’

Jasmin says the greatest challenge is the misconception that engineering (and other STEM pursuits) is purely technical.

The EWB workshops aims to show that there are ‘soft skills’ required, such as teamwork and innovation.

‘I’m really excited by the current focus on STEM at Lauriston and other schools, and the incredibly nurturing and passionate teaching. I hope that we will see more role models in schools and in the wider community to encourage females to pursue STEM pathways, or at least realise that it is a viable option for them and that it’s okay to be passionate about STEM.’

‘Engineering is relatively male dominated. I would love to see this change and see more women in leading roles within the engineering sector.’

At Lauriston, Year 7 students worked with EWB to build water filtration systems using basic materials. They had to consider the challenges faced by countries with limited ability to source materials. The engineering students also discussed the very important aspects of engineering and the crucial role it plays in society.

While completing her master’s, Jasmin is also working as an undergraduate engineer at XLam, a leading mass timber solution provider to the Asia Pacific region.

‘My job has been quite an exciting journey. XLam was the first manufacturer of cross-laminated timber (CLT) panels in the Southern Hemisphere, and there are a lot of opportunities for research and design innovation.’

Jasmin says the greatest challenge is the misconception that engineering (and other STEM pursuits) is purely technical.

The EWB workshops aims to show that there are ‘soft skills’ required, such as teamwork and innovation.

‘I’m really excited by the current focus on STEM at Lauriston and other schools, and the incredibly nurturing and passionate teaching. I hope that we will see more role models in schools and in the wider community to encourage females to pursue STEM pathways, or at least realise that it is a viable option for them and that it’s okay to be passionate about STEM.’
STUDENT INSIGHT

Student snapshot

One of the greatest attributes of Lauriston is the breadth of its programs and the diversity of its community. Following is a snapshot of some of our incredible students and their achievements both at Lauriston and in the wider community.

Lara Elliot

In 2018 Lara won the Years 7/8 category of the Global Village International Children & Youth Bilingual Speech Competition in Melbourne. As a prize, Lara was chosen as only one of 24 finalists from around the world to attend the 10th Global Village International Children & Youth Bilingual Speech Conference & Ceremony in 2019, where she was paired with a student from mainland China to write and deliver a speech in front of an international panel. Lara was the only finalist chosen to be interviewed on Chinese TV (SINA).

‘To represent Lauriston and Australia was such a great honour and I am very grateful for the teachers who helped. It was a wonderful opportunity to meet students from around the world and to experience the rich culture and history of Beijing. The scale of the city is immense and the level of technology is incredible. I will never forget the Great Wall and the Forbidden City. The experience has inspired me to further my studies in Mandarin and I hope to one day speak the language fluently.’

Kiara Punchihewa

Year 8 student Kiara Punchihewa was one of only eight avid readers selected from 120 applicants around Australia to be a judge for the 2019 Inky Awards, a teen choice book awards hosted by the State Library of Victoria. Kiara and the other judges read and discussed 20 books in three months (!) and shortlisted 10 books for the Inky Awards. The winners was announced in September and as well as sharing her experiences online for the State Library and at School in lunchtime bookclub sessions, Kiara was part of a student panel interviewing authors Oliver Phommavanh and Felice Arena at the Melbourne Writers Festival!

‘The qualities required of a judge included perseverance (to keep reading books I didn’t necessarily enjoy), time management, and the ability to work cooperatively with others. Another great benefit of my judging experience was the opportunity to read widely, and read genres I may not have considered reading otherwise.’

Allegra Trikash

Allegra began songwriting when she was just 12 years old. Now in Year 10, she has been gaining recognition at Melbourne venues performing live as her stage persona, ROYCE. ROYCE has released nine singles, three of which have played nationally on Triple J. In 2019, the single ‘Complicated’ was selected by Spotify to appear on their ‘New Music AU and NZ’, ‘Pop & Fresh’, and ‘The Office Stereo’ playlists. Allegra prepared for and performed her first live solo show while at Howqua and received huge support from the Lauriston community - from friends playing her songs on Mansfield radio and her music teacher Maria Lieberth helping her prepare for her first live solo show to the wonderful experience she is having as part of the Trebelles singing group and mixed choir at School and as a guest performer at this year’s Huntingtower Lunch.
Jessica McNair

Since arriving at Lauriston in Year 3, Jess has been involved in numerous committees, extra-curricular activities and classes that provided her with a platform to express her creative interests and helped her develop a strong passion in design. In her junior years at Lauriston, she was involved in after-school photography classes, participated in the Media Committee, and assisted with makeup, set design and lighting for the School musical. In Senior School, Jess studied Art and Visual Communication and Design and hopes to pursue her passion for design at university next year.

‘Lauriston has such a wonderfully strong community, which is particularly evident through House activities and sport. I competed in SnowSports and GSV with girls from years above and below, which allowed me to branch out and create friendships across the whole School. The sense of community and equality across all year levels at School was particularly evident for me when I was a Year 7 Peer Support leader for my House, Irving. The House spirit is a constant and has been an aspect of my school life that I have loved.’

Lara Kelly

Lara first learned to ski at the age of two. Since then, she has learned to snowboard and cross-country ski, and currently loves participating for Lauriston in all events at the interschools competitions. Lara achieved amazing results at the State Interschools in Giant Slalom Skiing (2nd), Skier X (3rd), Giant Slalom Snowboarding (1st), Boarder X (1st) and Cross Country (1st). This qualified Lara for the National Championships in all these events in which she won the Giant Slalom Snowboarding, Boarder X and Cross Country. Outside of Lauriston, Lara skis at Mount Buller Race Club and had a great season in 2019, taking out the U12 King of the Mountain series which combines results for Parallel Slalom, Giant Slalom and Skier X.

While Lara is very proud of her individual results, she enjoys the team success with her friends from Lauriston just as much. She loves going to school to see her friends, her favourite school activities are participating in Maths, Art and PE classes, and she plays in the Lauriston Basketball and Netball teams.

Lara hopes to one day ski and snowboard for Australia at the Olympics and World Cup. While training for this, she would like to study Veterinary Science and become a vet once she finishes her career on the World Cup circuit...

Veasna Gunaswa

Since Year 7 I’ve loved immersing myself in as many school activities and experiences as I can, from singing in choir to soccer. Not only did they help develop relationships with other girls across year groups, but it also gave me the opportunity to develop my interest in sport and music.

Advocating for humanitarian rights, particularly for younger women and education, has always been a passion of mine and blossomed in Senior School. I joined Lauriston’s Amnesty International group in Year 10 and was one of the leaders for 2018/2019. Being part of Amnesty has enriched my knowledge of the global community and highlighted to me the vitality of cultivating a more globally aware environment.

Indigenous reconciliation is also a key focus for me as a leader in 2019/2020. During the September school holidays, I travelled to Noonkanbah, an Indigenous community in Western Australia. We immersed ourselves in the school and incredibly welcoming community and it was a rare and exciting opportunity to be part of a younger generation working towards Indigenous reconciliation.

I am fortunate to be School Co-Captain for 2019/2020 with Jessica Detering. Leadership to me is about collaboration, about maximising individual skills and harnessing potential to achieve a collective outcome that benefits everyone. I am looking forward to this journey with the same eagerness I had when I first came to Lauriston in Year 7.
A magical Middle School musical

The audience was dancing in their seats as our incredibly talented Middle School students brought everyone's favourite nanny to life in this magical musical adaptation of Mary Poppins. But the final performance was just a small part of the experience, as shared by some of the cast members below.

Ella O’Brien (Year 8) – Bird woman

I think for all of us the musical has been a thing of wonder and an experience we will remember for our entire lives. The people I have met and worked with have been amazing. Meeting the Years 5 and 6 girls has been an absolute privilege and getting to know the Year 7s more has been amazing. The production week will be a treat for all of us: we can’t wait for the costumes, the makeup and the ecstatic feeling you get when you step onto the stage for the first night and first performance of the week. The moment when you get the moves perfect during rehearsal is when you feel like you can do anything. The food shared with friends over the Sunday rehearsals and the in-jokes we have are something we will all share forever. This has been an amazing experience and it’s the hard work of our teachers that’s made it all possible.

Charlotte Ross (Year 7) – Jane

We are 50 girls from four different year levels that have become a tight-knit musical community who share the same passions. It has been really incredible watching the show rise up from a few songs into a production. Everybody becomes increasingly more excited as more props and sets are introduced and as additional scenes are learned. We’ve learned songs in three parts and worked at improving our show. I really enjoyed the gradual process of memorising my lines too – it has helped me learn how to manage my time efficiently. Being part of this musical has really showed everyone what it means to be committed to something and is an amazing experience that I won’t forget.

Daisy Graham (Year 5) – Michael Banks

I’ve had such an amazing time working with all the cast members. Everyone is so kind and happy. Getting a main role meant that I could spend more time with people and get to know them better. I have learned how a stage show is put together, including the dancing, singing, acting and lots more. I’ve had lots of fun preparing the songs and learning new dances along the way. I am super excited for the performance night and trying on our costumes. It has been really amazing to be in such a big production and to know that teachers trust that I can do this.
Holly Rice (Year 8) – Miss Andrew

My experience this year as a cast member of Mary Poppins has been a very positive one. The commitment, reliability and effort required to produce a quality show, as well as balance sport, music and school work, has greatly improved my time-management skills. It has been so much fun meeting girls from different year levels and definitely made the whole production enjoyable. Although I don’t mind admitting that I am kind of scared of Ms Ryan at times, I have a lot of respect for her and the teachers involved in directing these productions. They have so much skill and work their hardest to help us perform to the best of our abilities. I am very excited for my songs on stage. Having a role with individual lines and songs, while nerve-racking, is awesome and has added to my overall involvement immensely. In a couple of weeks the musical will be on and the whole cast is very eager for production week. Among all the chaos and excitement, when the audience is clapping for you, all the hard work pays off and becomes very much worth it.

Jess Tabain (Year 7) – Mary Poppins

So far, being a part of the Mary Poppins production has been an incredible experience. I have met a wide range of girls from Years 5, 6 and 8 and have also been lucky enough to meet even more girls from Year 7. Working on the large group numbers has been my most enjoyable part of the production so far. Being with such a large, talented group of girls and getting to sing, dance and act with them has been amazing. Being in this production has taught me that a great show takes a lot of effort when it comes to learning lines, practising routines and finding the right notes to sing when working on duets. Mary Poppins is my first production at Lauriston and everyone has made me feel so welcome and comfortable when going to rehearsals, whether it be teachers giving me directions or talking to other girls backstage. During production week I am most looking forward to seeing the whole show come together with costumes, props, lights and sound. This is the beginning of my time at Lauriston and what a great beginning it has been. I can’t wait for what’s to come!

Freya Albrecht (Year 8) – Bert

Engaging in a musical allowed me to acknowledge each character’s importance and contribution to the performance. I initially perceived Bert as a sidekick, but as we rehearsed, I unveiled a story. I used this to build on my character’s speech, motion and motive and it allowed me to concoct a persona that I was confident in. Participating in Mary Poppins Jr has been an opportunity that I would not trade for anything. The musical doesn’t exclusively aim to produce a wonderful show, but rather a memorable journey for its participants. I have acquired many skills: independence, reliability and commitment. Wonderful friendships have flourished and I have immense respect for all the cast and teachers who dedicated their time to making this production spectacular. It has been an enthralling dream to rehearse and perform with such a delightful cast. Regardless of your experience, I strongly recommend all students should join a Lauriston production; it is an adventure that you will never forget.
MUSIC

MUSIC BRINGING OUR SCHOOL COMMUNITY TOGETHER

KATRINA LEHMAN
CONTENT WRITER

From the moment the Preps trotted out onto Hamer Hall stage carrying instruments larger than themselves, I was entranced.

Wielding a violin in front of 1000-strong audience is no mean feat for an adult, let alone a five-year-old. From guzhengs and saxophones to fusion ensembles and orchestras, each piece was flawless. I found myself murmuring: ‘Surely they can’t be students?’

Interspersing the performances with student narratives was also inspired: each girl shared her unique school music journey and the common threads were collaboration, friendship and community.

The Gala Concert at Hamer Hall was not only an example of dedication, skill and often breathtaking talent, it was the coming together of our School community, and the desire to give our children the opportunity and courage to achieve something beyond their wildest expectations.

But this was just one shining example of the incredibly rich and diverse Music program at Lauriston.

Throughout the year, we have had music performances at the Junior School Father’s Day Breakfast (3/4 Choir), the Huntingtower Lunch (Chamber Strings, Allegra Trikash and Old Lauristonian Nina Lloyd) and the Year 12 Dinner (Year 12 Lauriana and Charlotte Roberts – Music Captain). There have been solo and ensembles performances in Junior and Senior School assemblies, as well as informal performances at Blairholme and Kindergarten. The Chamber Music Luncheon and Blairholme Lunchtime Recital showcased our small ensembles and younger musicians. And our Friday Concerts have continued, with many girls using this as a performance opportunity before their AMEB Exams.

The House Music Competition was, as always, an afternoon of hilarity and noise with Andrews taking out the coveted 2019 House Cup. Finally, Mary Poppins Jr was a wonderful collaboration with the Drama Department and showcased the talent of our budding musicians and actors, as well as the hard work behind the scenes.

The opportunities available for our students from Prep-Year 12 are limitless. And the richness of our Music program would not be possible without such a dedicated and nurturing team of musicians and teachers.

The House Music Competition was, as always, an afternoon of hilarity and noise with Andrews taking out the coveted 2019 House Cup. Finally, Mary Poppins Jr was a wonderful collaboration with the Drama Department and showcased the talent of our budding musicians and actors, as well as the hard work behind the scenes.

The opportunities available for our students from Prep-Year 12 are limitless. And the richness of our Music program would not be possible without such a dedicated and nurturing team of musicians and teachers.
Encouraging curiosity and creativity through STEM

CHRIS TOMS
VICE PRINCIPAL AND HEAD OF JUNIOR SCHOOL

We believe that providing learning experiences for our Junior School girls that are engaging, hands-on and challenging is the most effective way of encouraging curiosity and creativity in STEM.

As leaders in STEM (Science, Technology, Engineering and Mathematics) education for girls, Lauriston has developed a sequential STEM program throughout the Junior School. The girls undertake an inquiry-based approach to STEM learning and are provided with challenges linked to real-world problems. Beginning in Prep, girls work through the engineering design cycle – Ask, Imagine, Plan, Create, Improve and Share – to create a range of digital solutions.

Prep–2
In Prep, the girls designed a toy box for their favourite toy. They had to measure and design a prototype using applications on the iPad. When they completed their prototype, they were given feedback to make improvements and then designed their final product for printing on wood in the FabLearn Lab. Through the process, the girls gained confidence in using a range of digital tools and built on their knowledge of mathematical and engineering concepts.

In Year 1, the girls broadened their skills through creating a sustainable fairy house for the Blairholme Fairy Garden. In this engineering project, the girls again worked through the design cycle, but this time with much greater complexity as they considered the types of shapes and structures needed to create a sustainable house. Assembling these houses was an engineering feat for the girls and they worked well to continually modify and improve their designs.

As part of the P–2 program, girls also have incursions from Coding Edge, a lunchtime STEM club for Year 2 girls, and a number of other plugged and unplugged opportunities to explore programming language through kinaesthetic experiences, Sphero, Blue Bots and Dash n Dot robots and coding applications. Underpinning these programs is the belief that an early introduction to basic programming concepts can help children build transferable skills such as problem-solving and critical thinking. Many children are perceived to be competent with modern technology, but often they are merely users of that technology. We aim for children to be creators of technology. This places the girls in good stead to be able to use more complex programming languages to create digital solutions in the later primary years.

Some highlights of our Junior School STEM program are as follows.

Encouraging curiosity and creativity through STEM

CHRIS TOMS
VICE PRINCIPAL AND HEAD OF JUNIOR SCHOOL

We believe that providing learning experiences for our Junior School girls that are engaging, hands-on and challenging is the most effective way of encouraging curiosity and creativity in STEM.

As leaders in STEM (Science, Technology, Engineering and Mathematics) education for girls, Lauriston has developed a sequential STEM program throughout the Junior School. The girls undertake an inquiry-based approach to STEM learning and are provided with challenges linked to real-world problems. Beginning in Prep, girls work through the engineering design cycle – Ask, Imagine, Plan, Create, Improve and Share – to create a range of digital solutions.

Prep–2
In Prep, the girls designed a toy box for their favourite toy. They had to measure and design a prototype using applications on the iPad. When they completed their prototype, they were given feedback to make improvements and then designed their final product for printing on wood in the FabLearn Lab. Through the process, the girls gained confidence in using a range of digital tools and built on their knowledge of mathematical and engineering concepts.

In Year 1, the girls broadened their skills through creating a sustainable fairy house for the Blairholme Fairy Garden. In this engineering project, the girls again worked through the design cycle, but this time with much greater complexity as they considered the types of shapes and structures needed to create a sustainable house. Assembling these houses was an engineering feat for the girls and they worked well to continually modify and improve their designs.

As part of the P–2 program, girls also have incursions from Coding Edge, a lunchtime STEM club for Year 2 girls, and a number of other plugged and unplugged opportunities to explore programming language through kinaesthetic experiences, Sphero, Blue Bots and Dash n Dot robots and coding applications. Underpinning these programs is the belief that an early introduction to basic programming concepts can help children build transferable skills such as problem-solving and critical thinking. Many children are perceived to be competent with modern technology, but often they are merely users of that technology. We aim for children to be creators of technology. This places the girls in good stead to be able to use more complex programming languages to create digital solutions in the later primary years.

Some highlights of our Junior School STEM program are as follows.
The diagram opposite highlights some key digital learning activities. These activities have been further enhanced by digital fabrication learning activities, particularly using our design thinking cycle and the equipment in the digital fabrication laboratory.

**Year 4**
In Year 4, the girls looked at the connection between length, area and perimeter by designing their own mini golf course. They began by using grid paper to map out a golf course to fit a required area. They had to problem-solve and look at how they could best use the given area to create a mini golf hole that can be played using a marble. Once they designed the layout of their golf course, they measured the length of the edges to create small fences to stop the ball from falling off the course. They then drew the required area and fences of the golf course in Vectornator, which created a raster file for printing on the laser cutter in the FabLearn Lab. First, the girls first cut out a prototype in cardboard. Following adjustments and some redesigning, they printed their final golf course out of plywood.

Year 4 girls have also been using the Dash robots to explore push and pull. They learned how to code Dash, and then they constructed a cart out of LEGO that carried rocks that Dash had to push and pull.

**Year 6**
Year 6 girls looked at how a microcontroller can be used to warn a community about an impending natural disaster. They were able to connect their learning in Science about the warning signs of natural disasters and their understanding of how sensors and radio function on the microcontroller could be used to warn a community. It was essential that the microcontroller could not only detect the natural disaster, but also send a warning to the community by using the radio signal. For example, students were able to use the thermometer to measure a spike in temperature and the accelerometer to measure shaking.

The Year 6 girls also participated in a mini Signature Project, where they combined their learning of electrical circuits in science with design and technology. The girls worked in small teams to design and build an object out of recycled materials. Using a motor, battery pack and wires, they then tried to get their objects to move.

Worldwide, the number of girls participating in the subject areas of STEM is declining. This is not apparent at Lauriston, but as educators we have to constantly find new ways to positively influence our students and create a culture of engagement and excellence in STEM studies. Through the acquisition of digital technologies and the implementation of an integrated STEM curriculum, we provide the girls with opportunities to develop key skills in problem-solving, creativity, critical analysis, teamwork, independent thinking, initiative, communication and digital literacy. These skills will be vital skills for life in our rapidly changing digital world.
HOWQUA HIGHLIGHTS 2019

We asked our Year 9 students to share their experience of a year in the High Country.

Emma Lazerides
Howqua has made me see the world from a wider perspective. It has made me realise how fortunate some people are compared to other people. It has taught me to be grateful because I may not get the same opportunity again.

Jess Wu
I’m starting to do things I didn’t think were possible before Howqua. It has given me opportunities to try things I never would have tried before.

Nicole Zhao
Through meeting new people and experiencing new things my perspective on the world has broadened and I’ve been able to open myself up to others.

Anabella Stephens
The Howqua experience allows us to grow into women who are independent, achieve goals and never leave anyone behind.
Abigail Zhang
I did not expect the experiences and knowledge I learned in Howqua to apply and correlate to everyday life back in Melbourne and the world. How much I have grown in maturity, confidence and resilience was also unexpected.

Sarah King
Howqua is obviously different for every year level that comes through. Despite what people said, I was surprised at how unchaotic Howqua actually was and how quickly I fell into a routine.

Angela Song
We had to get used to the daily routines and the Outdoor Program, but I found that after a few hikes, even though it was still hard, there was such a sense of accomplishment.

Lily Yang
I’ve learned how to challenge myself and how to encourage others.

Anonymous
The many challenges I faced at Howqua – mental, physical or emotional – have changed me. The staff was always there to support and guide us through our struggles, allowing us to become independent and confident, as only a Howqua girl can be.

Abigail Zhang
I did not expect the experiences and knowledge I learned in Howqua to apply and correlate to everyday life back in Melbourne and the world. How much I have grown in maturity, confidence and resilience was also unexpected.
STEM refers to the vast range of knowledge and skills that are increasingly in demand in our rapidly changing world. But STEM education is more than just acquiring new information and skills; it fosters the development of thinking skills such as creativity, problem-solving, critical thinking and collaboration that can be applied beyond the classroom.

Creating high-quality STEM learning opportunities is a complex task and requires an interdisciplinary team of teachers and industry professionals to collaborate together to create opportunities that are engaging, relevant, hands-on and use the most up-to-date technologies.

Every year in Science at Howqua, students study a topic on sustainable house design. For this unit we are fortunate to collaborate with Michael Ambrose, an architect from CSIRO, as part of the STEM Professionals in Schools program funded by the Australian Government’s Department of Education and Training.

Working in small groups, students are set the task to design and construct a model house that investigates the variables affecting heat transfer using the principles of passive solar design. Using HOBO temperature probes kindly donated by CSIRO, students record the different rates of heat transfer depending upon the modifications they have made to the design of their house. Students are encouraged to FAIL when undertaking this project, as it is the First Step in Learning. Students reflect upon their mistakes as a learning opportunity and then modify their house design to see if they can improve it. This process is repeated several times and the project culminates with students formally presenting their work to their peers.

Next year we intend on taking this project one step further by collaborating with the FabLearn Lab at the Armadale campus to bring the best house design principles together with laser cutters and 3D printers to create new prototype student houses for Howqua.

In Term 3 each year, students participate in a hands-on STEM Day. This year we were fortunate to be joined once again by Mr Ambrose and also Zara Dennis, one of the Science teachers from the Armadale campus.

Mr Ambrose ran a session on CSIRO imaging and created a 3D map of the Ruth Tideman Resource Centre with students. Then we headed down to the largest patch of flat grass we...
have (fondly called ‘the Flat’) for the designing and launching of water bottle rockets. Students applied their recently learned trigonometry knowledge to calculate the height reached by their rocket and were then set the task of exploring different design features to maximise the height reached.

There was no time to be idle, as it was then over to one of our steepest hills leading up to the campus (called ‘Reception Hill’) for billycart racing. Once students had done a safety check on the nuts and bolts of their homemade carts, it was gravity-induced downhill fun, with students applying the principles of physics to investigate concepts of speed, velocity and momentum.

After dinner the STEM activities continued with students coming together for a presentation on astronomy from Zara Dennis and an exploration of the life cycles of stars. The day culminated with students stepping back outside to witness the vastness of our universe in a little more detail using a Celestron NexStar computerised telescope, which was kindly donated by the Saunders family.

Students at Howqua are given many other opportunities to participate in extra-curricular activities that apply and extend their knowledge outside of the classroom. One such opportunity is the Sustainability Group which aims to decrease the campus’s use of resources and increase biodiversity in the local area.

One of the projects completed during the year is to construct animal nesting boxes. Students first research an animal whose habitat has been impacted by logging activities in the local area since European settlement. They then design, build and install their nesting box along the Howqua River. In collaboration with Landcare Australia, we have purchased three remote sensor cameras and use these to monitor the nesting boxes. Results are yet to reveal that the nesting boxes are being used, so we continue toFAIL, reflect and modify our design and hope for better outcomes in the future.

The unique environment that is Howqua provides teachers and students with endless opportunities to explore and advance STEM skills and knowledge through real-life, hands-on learning experiences beyond the classroom. 😊

Meet Briony Davenport

Favourite thing about Howqua?
My favourite thing about Howqua is its strong community. We wake up and have breakfast together, have a few classes together, go for a long jog through the bush together, plant a tree or two together, get some study in and then have dinner together before saying goodnight. During that time we have discussed some big ideas, possibly shed both blood and tears, hopefully have had an ‘aha’ moment, and have shared it together in a way that is meaningful. It is the community of Howqua that makes this place much more than just a job; it’s a way of life.

What do you teach at Howqua?
I teach science, maths, individual differences and learning enhancement. At Howqua we are able to take what we teach and then step outside to observe or apply it in the real world. I am also the Sustainability Coordinator. Over the years we have become more aware of our impact on this planet and have taken steps to reduce our consumption of resources and increase the biodiversity of the local area. Having the time after school has finished for the day to meet with students and focus on how we can make a difference has been pivotal to our progress.

Something few people know about you?
I have a secret love of fungi. While I consider myself to be a fun girl in general, spotting mushrooms in the wild on a cold and misty autumn day would have to be one of my all-time most enjoyable things to do.

Tell us a little bit about yourself?
I was a Howqua girl myself back in 1999 and was in Wirringga House. When I finished school I went to England for a gap year and then went to Adelaide University to study Bachelor of Science (Molecular and Drug Design). After finishing my Honours year, I worked as a Research Scientist at the Hanson Institute of Medical Research investigating cancer pathways. Funding for science in Australia was getting tight at that time, so my partner and I decided to broaden our career prospects by becoming teachers. Two kids, a dog, a master’s degree and 10 years later, here we are.

Do you miss ‘normal life’?
I really miss good sushi. And going to concerts. And restaurants that serve something other than chicken parmigiana. But that is about it.

What do you like doing in your downtime?
In winter, I love spending the day cruising the slopes of Mt Stirling on cross-country skis. In spring, I love going for a bush walk to spot wild flowers. In summer, I love dipping my feet in the Howqua River and spying little insects. And in autumn … it’s all about spotting fungi.
Young children are extremely capable of learning about STEM concepts. Throughout their play on an everyday basis, children are engaging with resources that provide for STEM education. However, the proactive involvement of educators and the planning of activities to stimulate curiosity is crucial to higher-level thinking and problem-solving.

Constructivist pedagogy is part of the Reggio Emilia philosophy we follow, which has problem-solving at its core. ‘Teachers operating within constructivist pedagogy work to identify children’s interests, structure activities around big foundational ideas, pose problems that are real and interesting to the children, and develop conceptual understanding of these ideas. Constructivist teachers value children’s points of view and challenge their theories.’ (Brooks & Brooks, 1999.)

What kind of materials motivate children to engage in and learn about the principles of engineering design? What does engineering design look like in a kindergarten environment?

One traditional area of play that stands out as a space where children can engage in opportunities for engineering design is the block area. By providing high-quality wooden blocks of varying sizes, an environment is created which children naturally gravitate to, to design and build intricate block structures. Children learn to think about the concepts of stability, balance, the properties of the materials, as well as number and spatial reasoning.

Watching as the ‘builders’ progress through three-year-old to four-year-old Kindergarten in readiness for school, the development of these skills is exceptional. Take a moment to view the outside structures that are built every day in our atrium at Niall House. These are complex feats of engineering.

As the children build more complex structures, they look for further materials to enhance their buildings. Our collections of loose parts greatly add to the different dimensions of the constructions and the games they play within them. By adding curved bamboo ramps and pathways, children can explore the way a variety of objects move. This adds the dimension of force and motion to problem-solving, as well as speed, steepness and the weight of objects.

Recently, two of the Kindergarten educators from Michael House attended a professional learning workshop by Tom Bernard from the USA, whose specialty has been to promote and analyse the exploration of sensory play to better understand children’s curiosity and competence in all areas of development. During the workshop he explained how to build in and around the sensory tables to make unique spaces for the children to play and learn, drawing them in to experiment and explore. He suggested building special apparatus with recycled and easy-to-access materials to encourage STEM thinking, and using different levels, spaces, holes, inclines, and horizontal and vertical planes so that children can experiment with the concept of transportation.

For example, water can be used in tubes and pipes by the children to examine natural flow, allowing them to make decisions about changing the direction of the flow. The pipes can include holes, inclines (down the tube) and horizontal and vertical concepts.

In the Kindergarten we plan our curriculum using an integrated approach within a play-based program. This provides us with the perfect opportunity to allow the STEM components of curriculum to flourish.
Having different levels enables the children to test stability, take risks and challenge others to take risks, and connect children in play at different levels. In a horizontal setting, children will have to use problem-solving skills to make the apparatus work. Building the apparatus with the children develops their creativity and problem-solving skills as well as their skills in predicting, hypothesising and experimenting. Being able to validate these skills is important for developing STEM thinking and develops their language and learning of the correct terminology.

As part of our Big Idea for 2019, we have introduced the children to the idea of design process. The design process is defined as the engineer’s approach to identifying and solving a problem. This approach is open to the possibility of many solutions, a context for rich mathematical, scientific and technological conceptual development. Too complex for preschool age children? Our young children spontaneously and enthusiastically designed and created using a multiple of materials, revealing the potential for integrated STEM education that is rigorous and relevant, but also within their capabilities.

As the Dolphin children worked through their ‘Making project’, they were supported with the principles of the design process. Inspired by the construction of the carpark next door, the children came up with their own ideas. The final outcome was the design of a dream home. The children drew their ideas, made prototypes using different materials and enlisted the skills of Glen, one of our maintenance team, who put a simple structure together while showing them basic woodworking skills and how to use tools in an appropriate way.

An important part of this process is the posing of questions while the children are problem-solving – What is the problem? What are the constraints? What are some solutions? – while getting the children to brainstorm the ideas and choose the best one, draw diagrams and make lists of materials. This gives the children ownership over the project. The next step for the Dolphin children was a visit to our digital laboratory, the FabLearn Lab, to make their final design into a 3D prototype.

The possibilities for incorporating STEM education into the younger years is endless as children are naturally curious about the world and learn through play. Anything that involves experimentation, discovery, building or collecting immediately stimulates their active minds. STEM experiences need to be engaging and interesting to the children; they need to be ‘real world’ challenges that are relevant to their lives and particularly hands-on, with experiential learning being at the core of the practical inquiry process.

STEM learning activities are embedded into our everyday curriculum in the Kindergarten and these experiences help our children create and innovate with confidence.
Using technology to track fitness

While traditionally physical activity and digital technologies may have been juxtaposed, as technology has progressed so has our ability to explore, measure, analyse and improve physical movement. Throughout 2019, digital tools have been prominent in enhancing student learning within Lauriston’s Physical Education curriculum.

**Video analysis**

Physical Education is an area which lends itself to visual and kinesthetic learning. Digital technologies provide students with clear videos of performance and specific techniques, as well as providing students with instant visual feedback of their own movement through delayed video replay. Advancing software makes this process easy to manage within PE lessons.

**Fitness tracking**

In 2019, the Physical Education Department implemented a fitness and skill tracking digital platform which centralises student data and provides an overview of observable physical fitness and skill development. The platform offers guidelines on levels of performance and provides individualised direction on ways to develop each of the tracking qualities, creating optimal challenges for all students.

Physical tracking protocols that use digital technologies provide more reliable data and allow accurate comparisons to be made for repeated measurements. Electronic jump mats measuring force now supersede the vertical jump, and infra-red timing gates provide an accurate measure of speed over 20 metres. Other cutting-edge technology can make qualities that were once immeasurable, accessible. Isokinetic dynamometers provide us with a reliable measure of strength and force plates provide objective data on ankle reactivity which determines how students can cope with the stress imposed on their bodies.

The revamped fitness tracking procedures assist students to set a range of health and fitness benchmarks, develop goals, inspire progress, and can also assist in the talent identification process to help provide sporting recommendations to students of all ages.
**CAMSA (Canadian Agility and Movement Skill Assessment)**

This year, Lauriston students in Years 4–8 were introduced to CAMSA. CAMSA is a measure of selected fundamental, complex and combined movement skills that are an important foundation for specialised and sport-specific skills required for participation in a variety of physical activities.

The CAMSA required students to review a video of the testing protocol with a step-by-step technique checklist and to then complete the movement sequence. Students actively reviewed their sporting performance to determine what elements of technique are demonstrated and those still to be developed. This was then paired with teacher evaluation and used as a valuable tool for assessment and development.

**Wearable technologies**

The integration of wearable technologies and digital devices into Physical Education has become essential with the rise of these devices in society. In an effort to motivate students to improve their health, we are now able to personalise classes with a classroom set of fitness wearables such as heart rate sensors to track the time spent at a target heart rate. We hope the wearables will help students understand the importance of being physically active every day and help them in the process of setting individual health and fitness goals.

One of the most pleasing aspects of digital technology used in Physical Education at Lauriston has been the increased levels of student motivation as a result of the ability to review aspects of their performance and measure personal health and fitness. Lauriston students are incredibly open-minded and using technology helps us to deliver valuable and engaging lessons.

We look forward to continuing the evolution of our digital tracking platform and the continued exploration and implementation of emerging technologies in Physical Education. We hope to continue fostering excitement in our students about how technology can improve their skills, health and lifelong fitness.
In the years since Lauriston established the FabLearn Lab, its function as a digital fabrication laboratory has truly become integrated into our Visual Art and Design program, particularly in our Senior School Years of 10, 11 and 12.

The opportunities provided by this innovation has enabled us to expand design thinking to highly practical and innovative solutions, particularly in the areas of product and environmental design. Students have acquired skills in programming to develop files that can be read; in the Lab, they have developed communication and collaboration skills as they communicate concepts and refined drawings to our technician, Andrew Gibson, and they interfaced with contemporary design practice as they modelled the skills used in industry. These opportunities have impacted the overall quality of our outcomes as noted by the Year 12 Visual Communication Design students’ successes in being selected for Top Designs in 2019 and by the excellent work produced by this year’s cohort.

Visual arts opportunities and applications have been most obvious in sculptural work, installations and in an expanded range of presentation options. Once again it was laser cutting that was the most popular technique, but applications of etching have also provided some excellent results. Most notable, this year was Ellen Ho’s etching into wood to emulate ancient Japanese woodblock printing techniques. This fusion of old and new enabled a significantly rich cultural, technological and conceptual investigation to occur as part of her overall International Baccalaureate Visual Arts experience.

The more subtle, but more significant benefit of this advancement in digital technologies application is the expansion that has generated in students’ design thinking. This essential 21st-century learning skill underpins successful design in a plethora of fields, organisations and communities. The ability to think deeply and broadly to problem-solve is a skill that will benefit our students well into the future. The way that this is supported by the fabrication opportunities is through the expansion of what is possible and through students having the ability to follow ideation of concepts through to presentation of these refined concepts. There is little doubt that the depth of thinking, engagement and collaboration, and the quality of outcomes produced have been significantly enhanced through our ability to design ideas knowing that we have the technologies and materials required to take those ideas through the entire design process to presentation.
6. Nelushi Dissanayake – La Belleza
7. Mia Savio – Red Poppy (part of a series)
8. Alicia Rice – Profondeur
9. Fonda Chen – Imagine if...
10. Ellen Ho – A walk through time
11. Ellen Ho – Marching Over the Stumps
12. Fonda Chen – Imagine if...
13. Daisy Upfal – Boundless Connection
15. Louisa Fletcher – Isabella
16. Gemma Colquhoun – Bloodbath
17. Jessica McNair – Reflection
18. Junhan Shen – Family Property
19. Madeleine Buckingham – The Butterflies Blocked by the Wall
There is a real sense of excitement at Lauriston as the first stage of our building project – the underground carpark – nears completion.

The carpark is an impressive space: at almost 5000m² it offers parking for more than 140 vehicles, three charging stations for electric vehicles, and bicycle parking and sensor lighting to reduce energy consumption.

But where the excitement lies is in the fact that once the carpark is completed and the turf for the field is re-laid in February 2020, work will commence on two key areas that will have a direct impact on our girls: developing a dedicated Sports, Health and Wellbeing Precinct and unifying the Junior School.

Sport has been an integral part of Lauriston since the Irving sisters founded the School in 1901. They recognised the importance sport plays in building healthy minds, healthy bodies and stronger friendships. Today, there is an increasing body of research that shows in addition to improved physical health, sport plays a positive role in youth development, including improved academic and behavioural development, higher self-esteem and better social skills.

The Sports, Health and Wellbeing Precinct will feature: a new gymnasium, including two multi-purpose courts; teaching and learning spaces for activities such as yoga, pilates, meditation, rowing, cycling and weight training; four adjoining outdoor courts for netball, basketball and tennis; outdoor cricket nets; new showers and change room facilities; a new learn-to-swim pool and refurbishment of the existing swimming pool.

Work on the new Sports, Health and Wellbeing Precinct will commence in April next year, with the new gymnasium expected to be completed by April 2021.

At the same time, work will begin on unifying the Junior School. Our Prep-Year 2 girls are currently based in the historic Blairholme. While it is a beautiful and much-loved campus, the girls spend a significant amount of time walking to and from the Huntingtower Road campus to attend specialist classes.

Unifying the Junior School will maximise learning time for our youngest students, provide modern teaching spaces and offer increased links, collaboration and mentoring opportunities across the Junior School.

The new facilities will include transforming the existing gymnasium into a Years 5/6 Centre, building a new link building between the 5/6 Centre and Montrose to house our Prep students, and refurbishing Montrose for our Years 1/2 students.

The final stage of the building project will see an Early Learning Centre established at Blairholme, thereby providing families with a seamless transition from childcare to three- and four-year-old Kindergarten.

The building project is being funded in part by the It’s Her Turn fundraising campaign. With an ambitious $5 million target, this campaign will ensure that the new facilities are delivered to a high standard and without entering into debt.

The Advancement team have been reaching out through a series of events and meetings to encourage parents, alumnae and the broader community to become involved in the largest building project Lauriston has undertaken this century.
If you would like to learn more about the project and how you could play a part in shaping Lauriston’s future, please contact Marina Johnson, Director of Advancement, on +61 3 9864 7582 or johnsonma@lauriston.vic.edu.au

Acknowledging bequests

Each year the Elizabeth Kirkhope Circle hosts an event to thank existing members and welcome others who may be interested in playing a part in shaping Lauriston’s future by leaving a gift in their Wills.

The event was hosted by Alix Bradfield, Honorary President of the Elizabeth Kirkhope Circle. Alix, whose daughter and granddaughters attended Lauriston, shared her reasons for becoming a bequestor and reminded everyone that giving to education is giving to the future.

Including a gift in your Will is a powerful and empowering act that can create a lasting difference for girls of the future, and a life-changing legacy that can help transform the world for generations of girls to come.

And it’s clear that the foresight and generosity of past bequestors has had a lasting impact on our girls. A bequest from Diana Robertson (1966) funds a scholarship awarded annually to the best History student in Year 10, while the bequest from Lilian Bayly (1930) helped establish the 7/8 Centre, which has welcomed hundreds of girls since it was opened in 2007.

‘It’s a great space for students to communicate and to hang out together.’ Kathlin, Year 7

‘It’s open and airy, and you feel you belong.’ Alex, Bella, Charlotte and Zara, Year 7

If the thought of empowering future generations of women by helping provide a world-class education is attractive to you, please contact us. By knowing your wishes we can personally thank you and ensure that your gift will support the areas of most importance to you.
**FAMILY MEMORIES OF BLAIRHOLME**

LISL BLADIN
ARCHIVIST

During the September holidays, I took Liz Cunningham to visit Blairholme, where she and her twin sister Patricia Lowe (Mildred, 1951) had been born and brought up. Her father, Lindsay Mildred, had bought the house in 1929 and the family sold it to Lauriston in 1975 following his death.

Our Property Manager Mark Costello provided Liz with a floor plan dating around the time of the sale and she provided details of renovations her family made to the internal structure of the house and identified the original plaster ceiling decorations.

Liz also explained what the rooms were originally used for, pointing out where the day nursery had been, which was later part of the billiards room, the telephone room, and the rear staff quarters which the children were not allowed to enter. She described the grand drive, which swept from the main gates on the corner of Murray Street around past the entrance steps and the camphor laurel tree to the existing gates out into Malvern Road. A large cypress hedge ran along the north and west boundaries, which protected Blairholme from dust blown into the city on the north wind. The lovely rose gardens were tended by the gardener, who lived in a room in the back garden.

Liz kindly allowed me to copy some of her family photographs, and a copy of the history that she and her twin sister had compiled. The following is an extract.

My twin sister and I were born at Blairholme in 1933 (our younger brother Donald died in 1966) and the following notes are made up from chats with our father, together with information researched by me when the School asked for a history of the house.

In 1877, William Bushby Jones built a large two-storey classic Victorian and named it ‘Brockelsby’. It was approached by a straight drive that ran from Malvern Road (parallel with Huntingtower Road) across the hockey field to a roundabout under the still-existing Moreton Bay fig tree. The grounds of Brockelsby extended along Malvern Road from Kooyong Road to Glenferrie Road. Murray and Erskine Streets were night cart lanes.

Mr Jones had two daughters and around 1887 he built two similar houses for them on the estate: one was Blairholme and the other was between Murray Street and Eskine streets. While Blairholme’s exterior remains largely as originally built, the other has had the tower and verandahs removed, but is still recognisable by its roofline.

Various Brockelsby blocks were sold off between 1877 and the turn of the century, but we are unsure when and to whom Brockelsby was sold and who owned it up until Lauriston purchased it.

Our father bought Blairholme in 1929 and lived there with his widowed mother until she died. He married our mother, Peggy Macfarlane, in 1931 and it was she who changed its original name of Awbridge to Blairholme after Blair Atholl in Scotland, from where her family immigrated in the late 19th century to New Zealand and later to NSW.

Various alterations to the house were carried out at that time, but in the 1950s there was some major restructuring to build a billiards room in the centre of the house. The day nursery, a staff sitting room, back hallways and some fireplaces were demolished to create the space and the floor stumps reinforced to take the weight of the table.

Following the death of our mother in 1973 and father in 1974, the house with its three-quarters of an acre grounds was sold to the school for $225,000, so returning Blairholme to its original connection with Brockelsby and the Jones family.

Since then the School has made many other adaptations, all with great sensitivity to the Victorian character of the house. The grounds have been skilfully adapted and the whole property is a delight to visit and surely a wonderful environment for girls to begin their lives at Lauriston.
In July, Principal Susan Just and Director of Advancement Marina Johnson had the pleasure of attending a meeting of the NSW Branch of the Old Lauristonians’ Association (OLA). The meeting was held at the home of Ailsa Faulkner (Purvis, 1947) who has been heavily involved with the group since its inception.

Ailsa attended the first meeting in 1961 at Sydney’s Pickwick Club, hosted by then Principal Elizabeth Kirkhope. At a subsequent meeting, it was decided that meetings would be held three times a year at the homes of members. In addition to welcoming Old Lauristonians, the group also hosted occasional lunches with the Sydney alumnae branches of both Melbourne Girls Grammar and Korowa. The group provided ex-Melburnians with opportunities to develop friendships and networks, making the move to Sydney easier.

Marina asked each of the ladies present about their memories of Lauriston, and I am delighted to share some of their stories with you.

**Ailsa Faulkner (Purvis, 1947)**
I attended Lauriston from 1938 until 1946. During the war years I remember the Air Raid drill which included filing in an orderly manner to Air Raid Shelters that had been dug out around the hockey field. However, because it was so wet in Melbourne the alternative drill to avoid getting muddy, was for girls to push their desks together under the classroom windows and crawl under them for protection. There was also an Evacuation drill whereby students, complete with their haversacks packed with necessary survival supplies (chocolate and biscuits), had to walk in two lines down to the Armadale Railway Station where, theoretically, they would be transported to safety.

**June Steel (McMaster-Smith, 1947)**
My family lived in the country and, as a result, I was a boarder at Lauriston from 1943 to 1946.

I remember Miss Kirkhope as kind and generous, often giving the boarders chocolate and lemonade to help them deal with their homesickness and we took turns sitting next to her during mealtimes. On one occasion, when it was my turn to sit next to her, we had tripe for lunch (definitely not a favourite). When Miss Kirkhope looked away, I secreted the tripe into my serviette and disposed of it later! I also remember Miss Kirkhope taking a few of the girls on a trip to the ballet. It was certainly a treat for a country girl. My love for the ballet continues to this day.

**Margaret Longstaff (Thompson, 1953)**
I attended Lauriston from Kindergarten to Year 12, and was one of the 11 students who were still boarding when the boarding house closed in 1953. I recall one evening in Term 3 a group of boarders decided to go to the pictures without permission. Unfortunately, they were spotted by an eagle-eyed adult who reported it to Miss Kirkhope. As a result, all boarders were gated for the remainder of the term; this cast a bit of a pall, but lessons are learned the hard way. My brother also attended Lauriston for his transition year, but he was always going missing from class in the afternoons as he was not interested in being at school all day. I remember enjoying Science classes and experiments taught by Biology teacher Jean Hook. Ms Hook often wore an academic gown filled with holes, although it was difficult to know whether the holes were the results of acid spills or cigarette burns.
Judy Sennitt (Mogg, 1959)
I started at Lauriston in Kindergarten, and for me, Sport was the highlight. [Judy excelled at javelin, and was Captain of the Athletics, Baseball and Basketball teams.] I know some girls struggled with Miss Davies (she became Headmistress in 1956), but in my view she respected students who were committed to achieving their best. It didn’t matter whether it was academia, drama, music or sport. One of my favourite pastimes was diverting Miss Davies during scripture classes. I would simply put up my hand and ask her thoughts about the Romans, and Gladys would launch into her favourite subject – Roman History. She was so engrossed in her topic that often girls would dive under their desks to complete their homework whilst she talked at length about her favourite topic!

Jill de Winter, (Lake, 1961)
I attended Launston from Kindergarten until Year 12. I spent my first years at Little Lauriston, which was housed in a church hall in Malvern, before moving to the ‘Big School’ on Huntingtower Road. Little Lauriston Headmistress Miss Brownlow would pick me up from home and walk me to school each day. Although she was always friendly during the walk, once she arrived on school grounds she immediately assumed her teaching persona. Gladys Davies was a friend of my father, who had achieved great results in Latin. Gladys assumed I would inherit my father’s love of Latin, which definitely wasn’t the case. In my Latin exam I ruled up the paper... and that was it!
Another memory I have is when snow fell in Melbourne. At recess all the girls built snowmen. We were very disappointed when we came out at lunchtime to discover our snowmen had melted!

Pamela Lee (1959)
I started school life at Little Lauriston (my brother was there at the same time), then spent three years at MLC and a year boarding at The Hermitage in Geelong, before returning to Lauriston. I was looking through some past copies of The Lauristonian recently and came across some of my poetry. Obviously someone thought it worthy of printing or perhaps they were short of copy! I’m not sure how to describe it – juvenile (of course, I was a child at the time), ridiculous or cringeworthy. They did make me laugh though. I recall Miss Kirkhope, Mrs McPhee and Miss Moon as always being caring, compassionate and not at all scary. I really did enjoy my time at Lauriston and made many friends, many of whom I see regularly; some live in Sydney, but the majority are in Melbourne.

It’s thanks to Pamela Lee that Susan and Marina had the opportunity to connect with the NSW Branch. Pamela recently attended a reunion in Melbourne and as a result of a conversation decided a visit was long overdue! They were delighted to meet this fabulous group of ladies whose bonds, developed through their time at Lauriston, have kept them connected with Lauriston despite distance and time.

These amazing Old Lauristonians have generously supported our Library. Read about the impact of their donation in the enclosed Lauriston Foundation Impact Report. 🌟
Senior Old Girls’ Music Lunch

Our Senior Old Girls enjoyed a wonderful lunch on Wednesday 9 October at the Music Lunch, where they were entertained by a few of Lauriston’s Senior Music students. It was a wonderful occasion where our girls of today engaged with our girls of days gone by.

Intergenerational photo – Armadale

Old Lauristonian mothers of girls who are currently at Howqua (top right) or at Armadale (above) gathered for a wonderful photo with their Lauriston daughters.
Class of 1989 – 30 Year Reunion

On Friday 17 May, nearly 40 girls from the Class of 1989 had a wonderful evening reconnecting with each other and enjoying some delicious food and drinks, in celebration of 30 years since graduation. After so many years, it is great to see that the connection between these girls is still so strong and vibrant.

L to R: Jasmine Fountain (Haag), Sarah Smith (Telford) and Rachel Vanzyl (Platts).

L to R: Kate Azzopardi (Pazitka), Tara Byrns (Lesins), Amanda Logie-Smith and Anna Campbell-Finlay.

L to R: Julia Doyle, Sammi Black and Sally Heeley.
Class of 1999 – 20 Year Reunion

On Friday 31 May, we hosted the 20 Year Reunion for girls from the Class of 1999. It had been a while since many of these girls had caught up, and it was a pleasure meeting them all.
Class of 1959 – 60 Year Reunion

On Wednesday 5 June, 12 girls from Class of 1959 attended a beautiful lunch and enjoyed an afternoon reacquainting themselves with their School during a tour after lunch.

Class of 1964 – 55 Year Reunion

On Wednesday 31 July, girls from the Class of 1964 attended a lovely lunch along with a tour of their School.
Class of 1994 – 25 Year Reunion

On Friday 9 August, girls from the Class of 1994 reunited for a wonderful evening to celebrate 25 years since graduation. The excitement in the room was palpable and they all had a fantastic night reconnecting and catching up on each other’s life stories.

BIRTHS


WEDDINGS

Congratulations to Sarah Vick (2000), who recently married Geoffrey Bazzan, Director of Maple-Brown Abbott. The wedding was at the All Saints’ Church in Woollahra, with the reception at their favourite restaurant, Bistro Moncur. Sarah and Geoff live in Woollahra with their French bulldog Lucky and Geoff’s 12-year-old son Harry, who was best man at the wedding. Old Lauristionians Sarah Whiteing (Harding, 2000) and Amber Stanley (1999) were among the bridesmaids. Sarah currently works for The Australian Ballet, looking after sponsorship.
Susan St Leon

27.2.1928 – 6.9.2019

Principal Susan St Leon (Irvine) was Lauriston’s Principal from 1973 to 1983. She empowered students and staff to ‘help people to realise what their own potentiality is and where their strength lies’. During her tenure, Lauriston expanded with the purchases of Niall House (1974), Blairholme (1975) and Montrose (1976). In 1982 the St Leon Library was opened. Susan was an important and much-loved member of the Lauriston community and will be missed by many girls who were fortunate enough to experience her guidance and governance at School. Susan passed away in Tasmania on 6 September 2019.

Valerie Heath (past staff, 1974–2005) homage

My first memory of Susan was sitting in the office awaiting my interview for the position of Speech and Drama Teacher at Lauriston. I wondered what a principal of a highly regarded private girls’ school would look like. I was imagining tweed and brogues when a whirlwind, a beautifully dressed woman in blue, blew through the door. The energy around her was extraordinary. Then she smiled. And I could not believe this was a principal.

I was delighted to accept the job offer, and soon became part of the Lauriston community – a community I loved for over 30 years.

At Easter 1974, Susan informed me the Year 12 students had expressed their desire to produce a review instead of a play (well, it was the early 70s!) and she wanted me to take over the school play. With only six weeks to do this, I was understandably cautious, but Susan’s determination and trust won me over. In response to my stipulation, ‘I will need the girls Tuesdays, Thursdays and weekends,’ she replied without hesitation, ‘Done!’ Susan gave me her full support, including bringing boxes of pastries to the School Hall at weekends. This, of course, charmed the girls!

I have a lot of drive, but with Susan behind me, it increased by 500%. I did not want to let her down. She reminded me of Helen Franklin, Head of the National Drama School where I had spent four years. They were both so charismatic and determined.

My husband supported me over those six weeks and The Vigil was a success. The relief was extraordinary!

Then came Susan’s next vision: ‘Valerie! We have a wonderful Art Department, a wonderful Music Department. I want you to build a successful Drama Department.’

Drama and theatre studies in those years were mainly for senior girls, but I received full support from Susan to introduce Middle School Drama and Junior Secondary Drama Festivals – where students wrote, produced and performed their own plays.

Susan’s passion was not just for the arts. Her commitment to build mathematics, chemistry and physics in a girls’ school was profound. In those days, girls rarely attempted these subjects, but Susan made sure they became an important and vital part of Lauriston’s curriculum.

When the Victorian Institute of Secondary Education offered teachers the opportunity to write courses at a Year 12 level, Susan encouraged us to participate. Hence, theatre studies became an entrenched part of Lauriston.

Susan had vision, drive, energy and commitment and was an extraordinary woman. I loved her then and I cherish the memory of her now. She changed many people’s lives and she changed mine.
Dilys Mary Crosser (Fethers, Class of 1938)
14.2.1920 – 17.4.2019

Dilys Crosser passed away in April this year, aged 99. Dilys was very involved in Lauriston, both while at School and afterwards. She attended Lauriston from 1933 to 1938 and was School Captain in 1938. In addition, she was a Probationer and Prefect (1937), assistant librarian (1937), a member of the Baseball team and Tennis team and Vice-Captain of Hockey (1938).

Dilys was also a talented singer and pianist and was a founder of the School’s first music club in 1938. That year the Music Club procured two violins, a flute and a cello, with the future objective of creating a School orchestra.

Dilys married Jack Crosser after World War II ended and had two children, Megan and Russell. The following is an excerpt written by Dilys and used in the Order of Service:

Suddenly it seemed that war was imminent; the air was electric with tension. I was right in the centre of the future enemy. My Swiss Banker host got to work for me and managed to get a train ticket for me to the border. From there I got to London and met up again with my teacher friend. I managed to get a cabin to share with a stranger (the last available berth, they told me) and so sailed home after war had been declared. Our liner zigzagged all the way home to avoid torpedo attack, so we were told, and arrived safely.

Shirley Holten (DeRavin, Class of 1943)
27.1.1927 – 8.5.2019

Shirley died in May this year, aged 92. Shirley was at Lauriston from 1938 to 1943. Shirley was both a Probationer and a Prefect, a member of the Tennis and Hockey teams and Vice-Captain of Irving House. Upon leaving school, Shirley went to Melbourne University and qualified as a physiotherapist. She married ‘Mac’ Holten, a Scotch College boy and Collingwood footballer. They married in 1949, moved to Wangaratta and had three daughters: Carolyn and Diana (twins), and Deborah. Mac went into Federal Parliament for 20 years while Shirley was busy looking after the family. Shirley’s sister, Jean (deceased, 1940), and nieces Robeena Evensen (Holten, 1975), Louise Dunn (Holten, 1978) and Virginia Connell (Holten, 1985) all attended Lauriston. She has six grandchildren and six great-grandchildren and was a proud Old Lauristonian to the very end.

1943 Hockey team
Left to right: Pat Gibson, Shirley DeRavin, Nanette McCausland, June Watt, Nanette Johnson, Jean Pitcher, Margaret Anne Browning, Rosemary Robinson, Margaret Wallace, Ruth Cox, Barbara Browning, Catherine Carlyle.

Edith ‘Morna’ Sturrock AM
5.3.1925 – 26.9.2018

Morna Sturrock, the talented woman who created the exquisite Lauriston Banner still used today, died in 2018, aged 93. Morna was a founding member of the Embroiderers Guild and was extremely talented at her craft. The banner, made in the 1990s, includes silver thread in the logo, which came from the Vatican. Morna’s son made the wooden banner stand. Helen Drummond, Lauriston’s former PE teacher, arranged for the Lauriston Banner to be made.
A tangible reminder of our past

LISL BLADIN
ARCHIVIST

in March this year I was asked to find out who Lauriston’s first law graduate was. I checked our ‘University Degrees’ honour boards, which date from 1916 to 1976, and found that Kathleen Alice Syme qualified with a Law Degree from Melbourne University in 1923. Looking at these honour boards, I reflected upon the importance of preserving tangible links to our past. They remind us where we came from and provide touchstones to mark points along our journey to where we are now.

It did not surprise me it took until 1916, 15 years after Lauriston opened, for one of our students to graduate with a Bachelor of Arts. From the beginning, Lauriston offered a curriculum up to the equivalent of Year 12, but only a small percentage of girls remained at school to complete their university entrance exams. Most parents took the view that a broad education would enhance a woman’s ability to carry out her role as a wife and mother, but not lead to a university education or paid career.

The majority of Lauriston’s first students concentrated on humanities and languages. Only the most talented maths students persisted beyond acquiring basic skills. The teaching of sciences at Lauriston required suitably qualified female teachers and specialised facilities, which were not easily available in what was then an essentially domestic school environment.

In 1934, Lauriston was assessed by the Education Department for its suitability to receive government scholarship holders and was found that the Science Room only provided the ‘barest essentials in accommodation, and the equipment is insufficient for laboratory practice for a class of 17 pupils’. Students at the time had to go elsewhere to study chemistry or physics as Lauriston only offered biology in its syllabus. In 1943, the Science Room was finally upgraded to a ‘real laboratory’ appropriate for senior chemistry.

However, it was not until the 1960s, under the leadership of Principal Gladys Davies, that our science stream gained resources and importance. With more women going to university and competing with men for jobs in the workforce, science subjects became an integral part of our School’s curriculum.

In 1963, the Commonwealth Government offered assistance to independent schools to build science laboratories and introduced a new scholarship scheme to support students in their last two years at school. In 1966, when the ‘Old House’ was demolished to make way for the new Special Studies Wing, this facility included then state-of-the-art science laboratories.

The ‘University Degrees’ honour boards record the fact that, despite setbacks, some of our early students forged a career in what we now identify as STEM subjects (science, technology, engineering and maths). In 1921, Dorothy Halford was the first Lauriston student to qualify for a Bachelor of Science, though curiously her degree was belatedly recorded among the entries from the late 1940s. In 1928, Hildred Mary Butler also qualified for her Bachelor of Science and in 1946 her Doctor of Science. Hildred became a bacteriologist, firstly working at the Baker Medical Research Institute in Melbourne, and later at the Royal Women’s Hospital.

In 1931, Lauriston had two firsts. Rachel Gillespie graduated from London University to be a Member of the Royal College of Surgeons. She had commenced her training as a nurse at the Alfred Hospital in Melbourne. In 1923, Rachel went to England on a holiday trip and ended up studying medicine at the Royal Free Hospital for Women in London. Enid Marks also graduated in 1931 with a Bachelor of Dental Science. Three years later, in 1934, Margot Cowen graduated with a Bachelor of Agricultural Science. It took until 1971 for the honour boards to record a Bachelor of Engineering degree — awarded to Deborah Canning by the University of Melbourne.

Our ‘University Degree’ honour boards indicate that up until the 1960s, less than 20% of Lauriston alumnae undertook a university degree in STEM courses. However, the honour boards do not represent other education options available at the time. Some Lauriston students took up hospital-based training to become nurses. Others went to Melbourne Technical College (later called RMIT) to study degree-level courses such as engineering or to get vocational qualifications for the workplace (for example, as a laboratory technician); and Lincoln Institute taught courses in applied behavioural and medical sciences such as physiotherapy, occupational and speech therapy.
The honour boards mainly represent University of Melbourne graduates and a handful of alumnae who ventured overseas or interstate to get their qualifications. The boards record both the graduate and postgraduate qualifications of Lauriston alumnae. By 1964, with the opening of Monash (1958) and Latrobe universities (1964) expanding our students’ options, the honour boards list each student’s qualification and the name of the university from where it was obtained.

The last honour board is incomplete, with only two entries for the years 1974 to 1976. The very last student listed is a late inclusion from the 1973 peer year: Anne Small, who obtained her Bachelor of Medicine and Bachelor of Surgery from Monash University.

I can only assume that once tertiary qualifications became ubiquitous, it was impractical to record all our students. The ‘University Degree’ honour boards represent nearly 60 years of alumnae education choices. Their hand-painted entries are touchstones that mark our students’ journey, from one of limited career options in the early 20th century, to the boundless possibilities that exist today.

Donations to the archives

Lisl would like to acknowledge the following 2019 donors. You can see some of these donations in our display cabinets.

Lisl works Monday to Wednesday and can be contacted on 9864 7579 or bladinel@lauriston.vic.edu.au

<table>
<thead>
<tr>
<th>Object</th>
<th>Donor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sports team, madrigals and other photographs</td>
<td>Margaret Birch (Deane, 1959)</td>
</tr>
<tr>
<td>Letter from Elizabeth Kirkhope and card from the Music Department</td>
<td>Suzie Brown (Metz, 1959)</td>
</tr>
<tr>
<td>Photographs, badge and memorabilia</td>
<td>Wendy Forbes (Penwarden, 1959)</td>
</tr>
<tr>
<td>Copies of her school photos</td>
<td>Gillian Cohen (1959)</td>
</tr>
<tr>
<td>Photographs and memorabilia</td>
<td>Lauren Rose (1984)</td>
</tr>
<tr>
<td>1928 Book Prize</td>
<td>Marilyn Armstrong, (1963) for her mother Jean Armstrong (Holmes, 1933)</td>
</tr>
<tr>
<td>Blazer and school dress</td>
<td>Tori Brookes (Mims, 1992)</td>
</tr>
<tr>
<td>1995 staff photograph</td>
<td>Helen Drummond, former staff member</td>
</tr>
<tr>
<td>Photograph, reports and memorabilia</td>
<td>Jane Hamilton-Fox (Hamilton, 1982)</td>
</tr>
<tr>
<td>Personal snapshots of staff and students</td>
<td>Patricia Ritter OAM (Sandral, 1950)</td>
</tr>
</tbody>
</table>
Semester 1, 2020 OLA events

February
11 Founders Day Morning Tea and Assembly
17 OLA Committee Meeting
28 Class of 2010 10-Year Reunion

March
13 Class of 2015 5-Year Reunion
19 Perth Chapter Event

April
20 OLA Committee Meeting
24 ANZAC Day Morning Tea

May
22 Class of 1980 40-Year Reunion
25 OLA Annual General Meeting

June
11 New York Chapter Event
19 Class of 1990 30-Year Reunion

If you’d like to receive Lauriston Life electronically, please contact news@lauriston.vic.edu.au or call 03 9864 7555.

/LauristonArmadale
/lauriston.gs