# Macarthur Girls High School

**Macarthur Girls High School is a comprehensive girls high school of 1000 students situated in Parramatta. Macarthur Girls High School encourages young women to achieve their personal best and beyond, empowering them with the skills to be successful citizens in an ever changing world. Students are offered a curriculum directed towards the Higher School Certificate with a combination of traditional and vocational education courses, ensuring that the needs and interests of all students are met.**

Through **strategic leadership**, in 2014 Macarthur Girls High made significant reforms to curriculum pattern, flexible learning spaces and the global staffing matrix to effectively implement Integrated Curriculum and STEM education. Integrated learning, including STEM, is a component of the pattern of study for all students from Years 7-10. For example, in Year 7 students study a semesterised program of STEM and Integrated Curriculum for two and a half hours per week. A holistic professional learning focus on STEM, Integrated Curriculum and 21st Century learning skills has been delivered across the school to build the capacity of teachers in meeting the needs of students.

Macarthur Girls has implemented a **Stage 4 Year 7 integrated STEM program**. In this project students were required to identify a disability and design a robot which would support someone with this disability to perform an everyday task, such as a robotic hand. Survey data showed that 86% of students have been able to make meaningful connections between mathematics, science and technology as a result of participating in this project. 86% of students also stated that they have developed their collaboration and communication skills in completing a major project. Following this program, Macarthur Girls will include STEM as a future subject.

The Science faculty has been involved in cross-curricula projects and activity based programs to extend and engage students in science. Activities include, NSW Mechatronics competition, Robogals, UNSW Girls in Engineering initiatives, University of Newcastle engineering competitions, school robotics project based learning, science competitions, Lachlan Macquarie College extension activities and School Science Fair.

**Technical components of the Performing Arts** have required a strong STEM focus in which students are involved in the design and construction of sets and theatrical equipment, design and programming of lighting systems including robotic lighting, design and control of sound and audio visual systems.

**The TAS faculty have implemented STEM teaching and learning programs** which have included bridge building engineering, coding game development linking to robotic design, architecture home design, product development utilising CAD and 3D printing facilities.

**The Mathematics faculty is developing problem-solving skills** of students in Stage 4 by investigating evidence-based strategies to increase their understanding of mathematics. In Stage 5, students are solving open-ended questions and developing critical thinking, reasoning skills to deepen their knowledge of mathematics. Stage 6 students attend Maths Inspiration in Term 3, a mathematics lecture that inspires students to study mathematics and other STEM subjects. All staff have undertaken professional learning in the use of the Numeracy Skills Framework in order to effectively integrate numeracy in all teaching and learning programs, including STEM subjects.