

YEAR 9 3-DIMENSIONAL MAKERS

A hands-on semester program where students explore design, engineering, and emerging technologies through creative problem-solving projects. Using the design process, students will develop practical skills in 3D modelling with Onshape, digital fabrication, electronics, and robotics. Throughout the semester, students will design and manufacture 3D printed solutions using Bambu Lab printers, create interactive systems with Arduino microcontrollers, and combine these skills to develop personalised robotic projects that sense and respond to the world around them. Students will also explore the importance of empathy in design by creating solutions that consider the needs, experiences, and challenges faced by others. This course is ideal for students who are curious, creative, organised, and motivated to use technology and design to solve problems that can improve people's everyday lives.

Students will:

- Build confidence and creativity through designing solutions to real-world problems
- Develop critical thinking and problem-solving skills through iterative design
- Learn to create and refine 3D models using industry-standard CAD software
- Investigate how digital technologies can sense and respond to stimuli using electronics and coding
- Develop practical manufacturing skills through 3D printing and prototyping
- Apply empathy and user-focused thinking when designing products and robotic solutions
- Improve ability to plan, organise, test, and manage projects independently and collaboratively
- Explore innovation, sustainability, and ethical design practices in emerging technologies
- Experience real-world learning through practical engineering, electronics, and robotics challenges