



# mania

## News from the Department of

# Technology and Applied Studies

Issue 3 2025

**Term 3** sees the submission of the HSC Projects and Folio of Works for Industrial Technology Metal & Timber + Textiles and Design.

### Year 12 Industrial Technology Metal Projects

**Teacher: Mr Brad Hart**



Caid Van Wyk designed and built a drinks trolley that features the Springbok and Boab Tree to showcase his South African background. The trolley has a slide-out tray (middle tray) for easy access.



Kantinan Kityanyong designed and built a BBQ. Kantinan used a 44-gallon drum to promote sustainability by reusing steel that had already been used. The drum was supported by a heavy-duty frame and will later be fitted with gas fittings by a professional.

Samuel Jackman Designed and constructed a Mailbox. Samuel designed this for his home for easily accessibility to mailbox, making it mechanised to open. He also incorporated a solar panelled light for visibility at night and solar panel to avoid battery/ power consumption. Samuel incorporated traditional scroll work to add a vintage theme to the project.



Kobi Critchley designed and built a rear bar for his vehicle using the CNC plasma cutter to shape and cut brackets for his project. Kobi used Circular Hollow Section (CHS) for the main frame and reinforced it with sheet metal. He finished it with black powder coating. Kobi also designed and built a tyre swing for the rear bar as an extra feature of the project.



Samuel Schilt designed and built a heavy-duty squat rack/multifunctional training station. He included a pull-up bar, adjustable J hooks for squatting, bench pressing, and shoulder pressing, along with the option to secure it to his gym floor. He finished the rack with black spray paint to prevent corrosion.



Riley constructed a Flat Sheet Rear Bar for his vehicle, heavily utilising 3D modelling program Fusion 360 to design and shape his project. Riley made multiple test models and design his unique shapes in Fusion 360, then used the CNC Laser and Plasma to cut these pieces before securely welding. Riley also designed and constructed a tyre swing as an addition to his project.



William Lott designed and built an Offset Smoker, using the CNC plasma to cut out the components for his project. Will included the offset firebox, a chamber for heat and smoke transfer, a BBQ section for the food, and a chimney. The frame is heavy-duty to support the heavy components and keep it stable.



Seth Wrigley designed and built an outdoor metal chair with timber slats for seating. He also incorporated a storage compartment underneath for storing outdoor furniture pillows, blankets, and more.



## Year 12 Industrial Technology Timber Projects

**Teacher: Mr James Buckland**

Hamish Cassidy has designed and built a record player entertainment unit. He crafted his unit from Sydney Blue Gum, with Blackbutt as a complementary timber. Hamish included four



drawers, a hatch section with a lifting lid for his record player, and a range of cabinetry joinery to assemble his project and a range of fittings such as drawer runners and handles for functionality.

Levi Dickie designed and built a resin-poured table and chairs. Levi purchased a burled slab of timber and



made templates to resin pour his top and the tops of the chairs. Levi also incorporated steam bending into his project for the legs of his table and designed and created supports to ensure stability. Levi faced several problems during his project, which he successfully overcame through commitment and motivation to succeed with his Major Design project.

Riley Sawyer designed and built a hallway table from various timbers. Riley used fine joints like mortise and tenons, housing, and knockdown fittings to put his project together.



Hunter Jennens crafted an outdoor bar table from Sydney Blue Gum. Hunter used mortise and tenon joints, cross halving, and knockdown fittings to attach the top.



## Year 12 Textiles and Design

**Teacher: Mrs Theresa Avery**

Maya Ljumanovic



Shae-Lee Lacey



Kahlie Clark



Tanisha Reddy





# Around the grounds!

## Year 9 Industrial Technology Engineering

In Stage 5 Industrial Technology Engineering this term, students have been working with our new Lego Spike sets to support their learning. They are exploring topics related to mechanical engineering, such as gears, motors, and forces involved in mechanical systems. Students are using Lego Spike to build their vehicles, which enables them to code and programme their cars for multiple tests. On the right, you can see some of the calculations and tests that students are performing.

Lego Car - Red Thunda

Zee Tulio – Lachlan Deacon- Isak Van Der Merwe

Weight: 308g

Gear Ratio: 5:3

Speed Ratio: 3:5

Motor Rotation Speed: 185 rpm

Motor Torque: 3.63 N.cm

Wheel RPM: 111

Wheel Diameter: 56mm

Wheel Torque: 6.05 N.cm

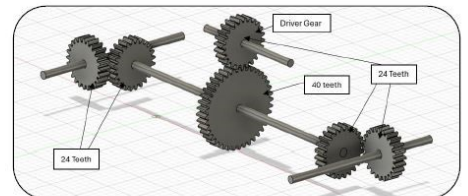
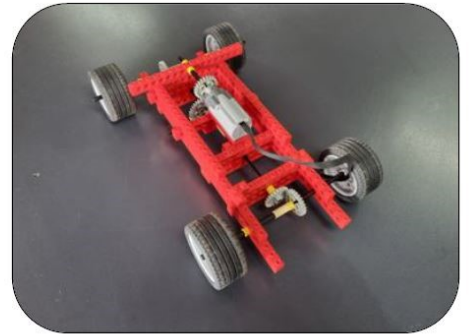
Wheel Circumference: 176mm

Max incline: 48 degrees

Coefficient of friction: 0.37

Normal: 2 N

Frictional Force: 0.74



## Stage 4 Food + Agriculture

Mr Koenig is working with Stage 4 Food & Agriculture students to learn about sustainable living and food consumption. He has updated the school Ag Plots, and students have been growing vegetables and fruits, which they then use for cooking in their food practical lessons. They are being taught about the growth of fruits and



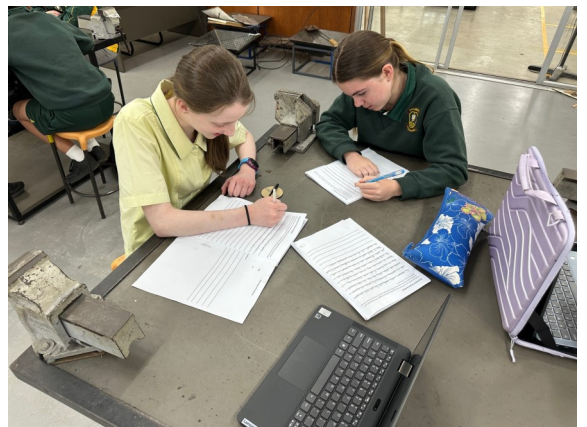
vegetables, seasons for growth, climates, geographic location, and more. Next year, the new Technology Syllabus will place a stronger emphasis on sustainable agriculture, so stay tuned for more updates on the St Clare's HS Agriculture plots.



## Stage 4 Metals



As part of our school and faculty goals, we aim to improve writing and literacy skills across all subjects within Technology. In Stage 4 Metal, Mr Higgins has students handwrite parts of the folio for their



spinning logos to demonstrate their understanding and communicate their knowledge. For clarity, students consider three levels of success (Surface, Deep, & Beyond) and handwrite the processes they have completed in as much detail as they can comprehend.