



Smart Farming

Industry Alignment

Students will be exposed to technologies and processes used in:

- Digital Electronics
- Sustainability & Renewables
- Food & Fibre
- Transport & Logistics

Curriculum Areas Covered																				
Tech			English		Arts				Humanities			Capabilities								
Science	Design & Technologies	Digital Technologies	Mathematics	Health & Physical Education	English	EAL	Dance	Drama	Media Arts	Music	Visual Arts	Visual Comm & Design	Civics & Citizenship	Economics & Business	Geography	History	Critical & Creative Thinking	Ethical	Intercultural	Personal & Social

Duration

This program can be undertaken on consecutive days or spread over a term.

1 day for immersion activities.
2 days at Yarra Ranges Tech School.

Curriculum Level

This program is suitable for students from Level 7 to Level 10.

This program introduces students to horticulture and agricultural practices. Students will investigate current trends and explore the application of technology and innovation that can benefit or enhance current agricultural practices. On day one, students will experience horticulture and research sites, interacting with industry professionals and building research and empathy knowledge*.

The students then spend day 2 and 3 in teams, investigating and practicing techniques of different smart farming technologies. On the final day, they present their solutions to the challenge they identified on day one, demonstrating prototypes and their learning journey.

Key Learning Objectives

- To understand the needs of growers and farmers to maximise production yields while improving sustainability
- To gain an understanding of current farming processes and identify future opportunities
- To design a smart system which collects farming data (e.g. light, temperature, moisture) and uses this information to adjust growing conditions

Technologies Introduced

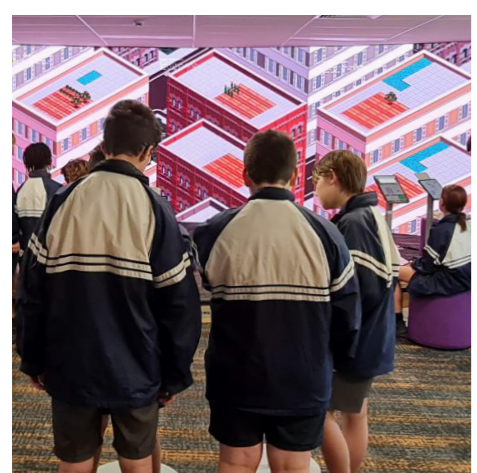
Students will develop knowledge and skills in:

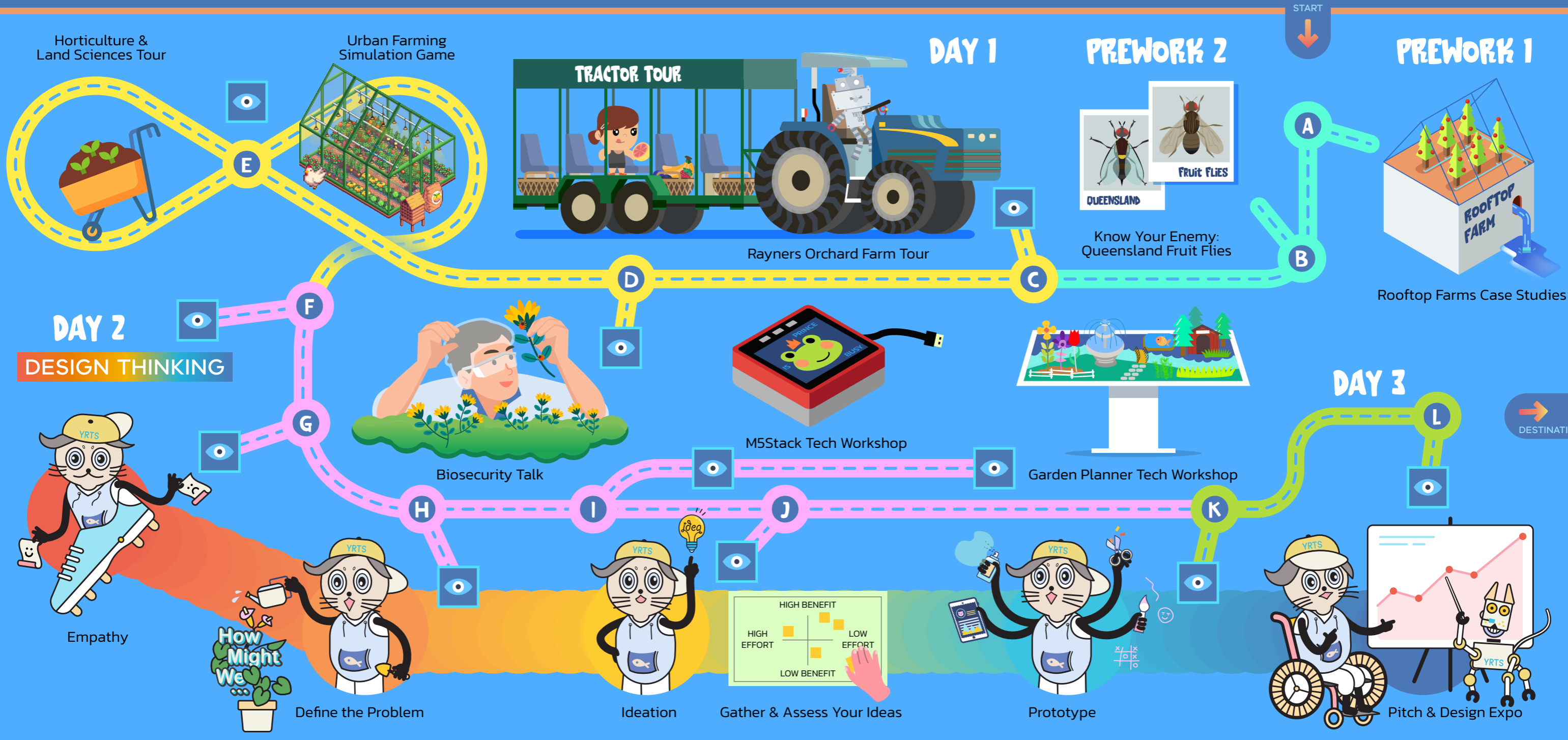
- Sensor design
- Autonomous Vehicles
- Robotics
- Coding
- Electronics for Internet of Things

* These visits may be physical or virtual depending on factors such as weather, site availability and government policies relating to student excursions



Student Work





Structure of the three days

Day 1	S1	Rayners Orchard tour	B	Break	S2	Introduction to Smart Farming Biosecurity talk	L	Lunch	S3	Horticulture tour Urban Farming simulation game	D	Depart
Day 2	S1	Smart Farming overview Define problem	B	Break	S2	Tech workshop – M5Stack	L	Lunch	S3	Tech workshop – Garden Planner Generate ideas & assess ideas	D	Depart
Day 3	S1	Review of Day 2 Prototype & test	B	Break	S2	Prototype & test Pitch – What is it?	L	Lunch	S3	Pitch – Presentation Pack up & survey	D	Depart

Please note: Teachers are expected to assist with the program and technology throughout the day. Optional professional development is offered for both technologies and the Human Centred Design Thinking process.