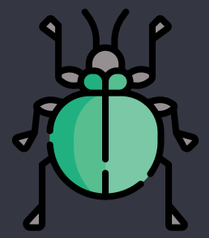
Onsite



Insectoids

Industry Alignment

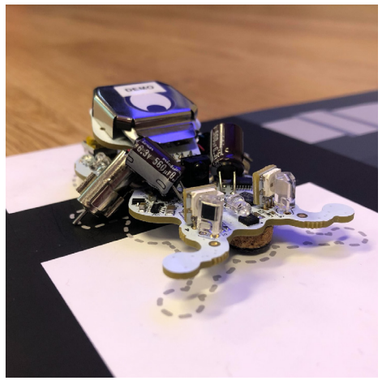
Students will be exposed to technologies and processes used in:

- Industrial Design
- Robotics
- Environmental Science
- Mechanical & Mechatronic Engineering
- Project Management
- Climate Change Science

Curriculum Areas Covered

	Tech					English	Arts							Humanities				Capabilities			
Year Level	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
7 & 8	■	■	■	■		■												■	■		■
9 & 10	■	■				■												■	■		

Student Work



Duration

This program can be undertaken on consecutive days or spread over a term. 2 days at Yarra Ranges Tech School.

Curriculum Level

This program is suitable for students from level 8 to level 10.

This program introduces students to biomimicry, challenging them to look at how insects have developed specific abilities and biological features to overcome challenges.

The program puts students in the role of developers. Their challenge: to design a robot that can clear obstructions from water pipes. As a team they will investigate insects, explore issues around water science, mechatronics, digital design and engineering principles. Over the two days the students will program small insectoid robots in addition to using Virtual Reality to research, design and then navigate through a pipe maze to clear obstructions.

Key Learning Objectives

- To understand how teamwork can solve current and future real world problems
- To combine various sources, including linking known and new information and technologies, to create original concepts and ideas
- To understand the roles and activities involved in the development of Virtual Reality and Robotics design
- To understand the importance of understanding environmental factors and their impact on the built environment

Technologies Introduced

Students will develop knowledge and skills in:

- Sensor design & application
- Autonomous vehicles
- Robotics
- Coding
- Virtual Reality

YARRA RANGES
TECH
SCHOOL

INSECTOIDS

PREWORK
DAY 1
DAY 2

START

PREWORK 1

Biomimicry

DAY 1

Ringo
Tech Workshop

DAY 2

Unreal Engine
Tech Workshop

PREWORK 2

Insects

PREWORK 3

Arduino

DESTINATION

Structure of the two days – Day 1

S1	Insectoids overview Tech workshop – Ringo
B	Break
S2	Open Design – Navigate mazes Open Design – Display colours & create sounds
L	Lunch
S3	Insectoid races
D	Depart

Structure of the two days – Day 2

S1	Insect game development overview Tech workshop – Unreal Engine
B	Break
S2	Open Design – Design your own game
L	Lunch
S3	Present insect games 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.