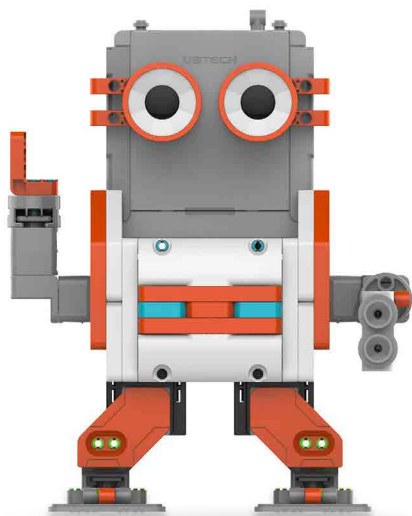
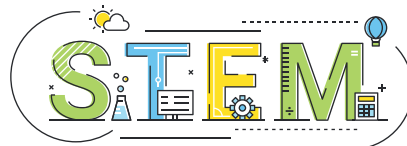


UBTECH ASTRO CHALLENGE



RATIONALE FOR THE CHALLENGE

- To increase the participation of school aged students in innovative, engaging and creative STEM robotics and coding learning experiences.
- To support the growth of creative thinking in children to enhance their future opportunities.
- To develop skills for future workforce, such as teamwork and collaboration.
- To inspire and equip participants to achieve anything they can imagine.



BUILD.

CODE.

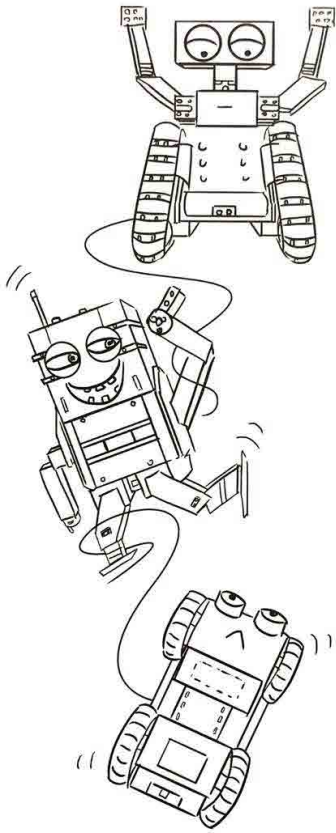
PLAY.



Contact **C.R. Kennedy** for more information:

VIC 03 9823 1555 | NSW 02 9552 8350 | QLD 07 3632 6777 | SA 08 8410 0533 | WA 08 9489 8500

email sales@crkennedy.com.au | web crkphotoimaging.com.au



WHY ROBOTICS?

Robotics provide a real-world context of discovery and learning that leads to engaged, active problem solvers of all ages. By combining practical experiences in engineering and mechanics, this program allows you to be a creator and designer, not just a user and consumer of technology.

COMMUNICATION

By using the UBTECH Robot kits, important communication skills will develop – explaining ideas, describing the process and challenges along the way.

PERSEVERANCE

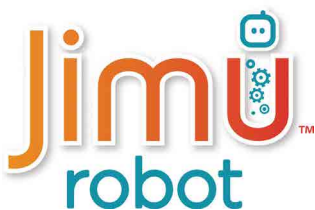
Using UBTECH kits encourages persisting with a task to see the vision realised. Having a go, taking time and perseverance to complete the challenge will give an immense satisfaction when the completed work is successful. This has an immensely positive affect on one's confidence and self-esteem.

CODING FUNDAMENTALS

Programming can be too abstract. By having to control a physical robot and seeing what goes wrong, we can learn what UBTECH robots are able to do. Very quickly it is recognised that precise instructions are required.

WHY UBTECH ROBOTS?

Our robotics programs establish the strong foundation students need to thrive. We have created a high-quality STEM program integrated with the development of 21st century skills and computational literacy. UBTECH robots will spark greater curiosity, innovation and ingenuity in all ages.



JIMU ROBOTS AND SPACE

Blast off into a robotic galaxy to build one of three robots in the AstroBot Kit. This interactive, building block system takes creativity and learning out into the stratosphere! The kit comes with 387 interlocking and interchangeable parts - everything needed to create AstroBot, Rover, Astron or even your own creation.

TO START:

1. Open the kit and lay all the components out on a clear, flat space.
2. Download the app - **BEING CAREFUL TO CHOOSE THE CORRECT KIT!**
3. Follow the instructions to build.
4. Register and log in – unlock your robot through the Learning Modules.
5. Once you have opened all 8 padlocks – you are now ready to take part in our unique **'out of this world'** challenge!

THE UBTECH ASTRO CHALLENGE

The UBTECH Astro Challenge is an ‘out of this world’ programming challenge that aims at providing an innovative and creative program, whilst utilising the unique robots from UBTECH.

We can send robots to space without worrying about their safety. It is much cheaper than training and sending a human. Robots can do many things that humans cannot do. Some can withstand high levels of radiation, extreme temperature or harsh conditions. We also need the robots to be robust and designed to complete many tasks.

This challenge has been designed to simulate the development of robots to explore our universe. Each challenge is in 3 parts. Your choice is the Moon or Mars.

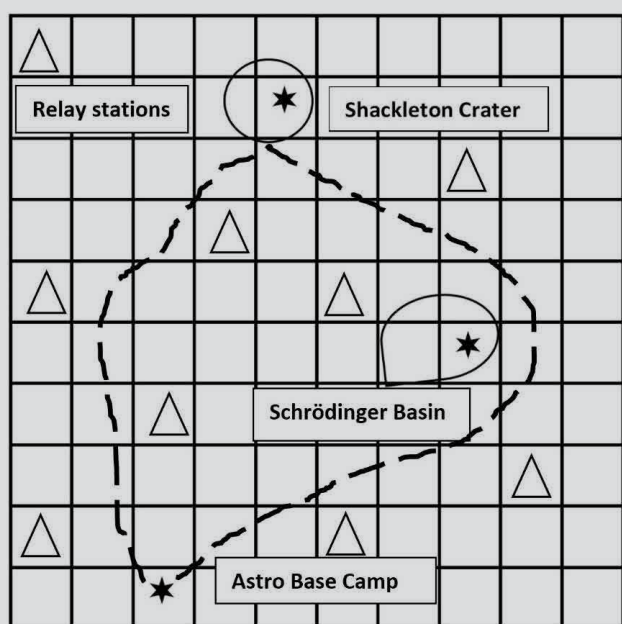
MOON MADNESS

Part 1 Using the scale model of the Lunar surface, code Astron to walk the Lunar surface in 1/6th gravity.

Part 2 Design and build an ice sample carrier to retrieve samples from Shackleton Crater – an icy crater on the South Pole of the Moon. Place the carrier at the crater.

Part 3 Send out Astrobot to retrieve the ice sample from Shackleton Crater and bring it back to base camp. (Code would take some time – just driving would be easier.)

Create a 2 – 3 minute video of your Moon or Mars Astro Challenge and upload to the website: onegiantleapfoundation.com.au/ubtech



THE UBTECH ASTRO CHALLENGE

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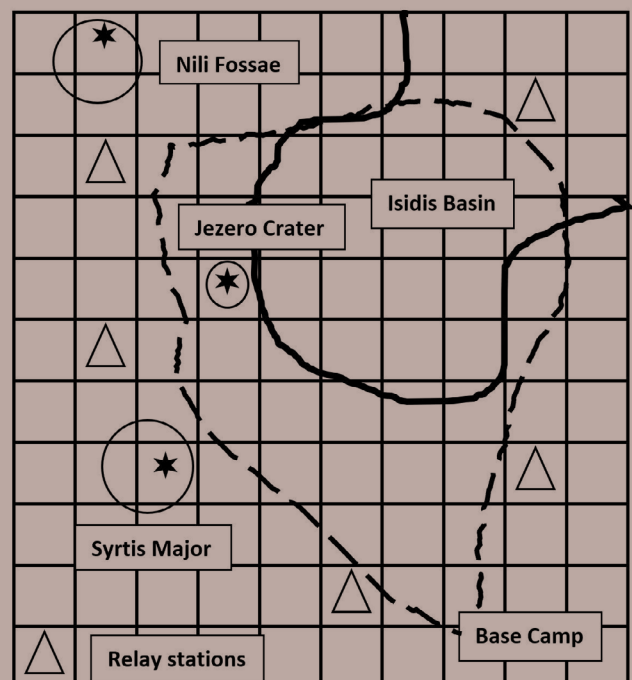
MARTIAN MAYHEM

Part 1 Using the scale model of the Martian surface, code Astron to walk the surface of Mars in 1/4th gravity.

Part 2 Design and build a model of a series of solar panels to be used in the area between Nili Fossae and the Jezero Crater.

Part 3 Send out Rover to deliver the solar panel array and come back to Base Camp. [Code would take some time – just driving would be easier.]

Create a 2 – 3 minute video of your Moon or Mars Astro Challenge and upload to the website: onegiantleapfoundation.com.au/ubtech



AUSTRALIAN CURRICULUM

GRADE 5 AND 6

STANDARD IDENTIFIER	LEARNING AREA	STANDARD DESCRIPTION
ACTDIP019	Digital Technologies	Design, modify and follow simple algorithms involving sequences of steps, branching and iteration (repetition).
ACTDIP020	Digital Technologies	Implement digital solutions as simple visual programs involving branching, iteration (repetition), and user input.
ACMMG108	Mathematics	Choose appropriate units of measurement for length, area, volume, capacity and mass.
ACMMG113	Mathematics	Use a grid reference system to describe locations. Describe routes using landmarks and directional language.
ACMMG137	Mathematics	Solve problems involving the comparison of lengths and areas using appropriate units.
ACELY1703	English	Use comprehension strategies to analyse information, integrating and linking ideas from a variety of print and digital sources.
ACELA1524	English	Identify and explain how analytical images like figures, tables, diagrams, maps and graphs contribute to our understanding of verbal information in factual and persuasive texts.
ACSSU078	Science	The Earth is part of a system of planets orbiting around a star (the sun).
ACSH083	Science	Scientific knowledge is used to solve problems and inform personal and community decisions.
ACSIS218	Science	Construct and use a range of representations, including tables and graphs, to represent and describe observations, patterns or relationships in data using digital technologies as appropriate.
ACSIS110	Science	Communicate ideas, explanations and processes using scientific representations in a variety of ways, including multi-modal texts.

YEAR 7 AND 8

STANDARD IDENTIFIER	LEARNING AREA	STANDARD DESCRIPTION
ACTDIP030	Digital Technologies	Implement and modify programs with user interfaces involving branching, iteration and functions in a general-purpose programming language.
ACTDIK023	Digital Technologies	Investigate how data is transmitted and secured in wired, wireless and mobile networks, and how the specifications affect performance.
ACTDIK024	Digital Technologies	Investigate how digital systems represent text, image and audio data in binary.
ACMNA173	Mathematics	Recognise and solve problems involving simple ratios.
ACMNA189	Mathematics	Solve problems involving profit and loss, with and without digital technologies.
ACELY1728	English	Use a range of software, including word processing programs, to confidently create, edit and publish written and multimodal texts.
ACELY1738	English	Use a range of software, including word processing programs, to create, edit and publish texts imaginatively.
ACSIS133	Science	Communicate ideas, findings and evidence based solutions to problems using scientific language, and representations, using digital technologies as appropriate.



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