

The GATEWAYS BRAINWAVES Club

Term 3 2021: Junior TechnoKids – Year 1 and 2

Venue: North Curl Curl Public School

Term Fee: \$285.00

ROBOT WORLDS AND THE INTERNET

Robots are extremely useful to humans, whether it is exploring the unknown in faraway planets, performing difficult medical procedures, or handling dangerous materials. They have become an integral part of our lives, and chances are, you've interacted with a robot today! Junior TechnoKids, welcome to *Robot Worlds and the Internet*! This term, you will investigate coding and robotics online, discover the importance of sequencing, and learn safety while using the internet, to understand just how important robots are to helping humanity survive.

31 July

Meeting 1: Robot Worlds
Focus: Digital Literacy

Junior TechnoKids, during our first meeting you will explore how robots work and why they are useful to humankind. To develop our digital skills, you will have the opportunity to edit and create your own digital robotic book by harnessing the full potential of Google Classroom and the Slides app. However, a robot is only as good as the code that instructs it, so we will investigate this by making and coding with Lego WeDo 2.0. In doing so, we will model how robots allow scientists and engineers to boldly go where no human has gone before!

14 August

Meeting 2: ABC, its easy as 1,2,3!
Focus: Sequencing

Calling all Junior TechnoKids to order – sequencing that is! Today we will learn the importance of sequencing as the first computer science principle for all robots great and small. If your code is in the wrong order, expect the unexpected. Together we will further our directional language skills by programming sequences of forwards, backwards, and left and right 90 degree turns using an app, before we experiment with floor robots from the TTS family. From the Connected Blue Bot to the latest edition, the Off-Road Rugged Robot, you will take charge to code your robots and bring them to life.

28 August

Meeting 3: The Great Digital Dilemma
Focus: Internet safety and digital citizenship

Game on! Today we will use gamification to learn how to be safe and confident explorers of the online world. By completing unplugged craft activities linked to digital citizenship, you will develop knowledge to play safe, learn safe, and stay safe when navigating the internet. We face digital dilemmas online all the time, and in today's meeting, it's up to you to decide how you will respond to them – one click at a time! Do you have what it takes to be a model digital citizen in our increasingly online world?

11 September

Meeting 4: You're speaking my Coding!

Focus: Coding

Become inventors, problem solvers and creative thinkers when you meet Edison, the programmable robot. Edison will scan barcodes to activate pre-set programs and extend the Junior TechnoKids understanding of programming. You will then be further challenged to use your design thinking skills to engineer a pen-holding robot that can create a work of art to behold. This is sure to be some sensational STEAM!

What to Bring: Each week Bring an iPad, laptop or Chromebook with the ability to download programs from the internet or app stores. Each week please bring an A4 notebook and a well-stocked pencil case. Please also bring a hat, drink and snack for the break (no nuts please).

About the Club Leader: Working as a K-6 RFF teacher, **Russell Cairns** is a specialist STEAM Teacher and Robotic Coach, who teaches the subject digital technology explaining how computers work and digital literacies how best to use devices for creativity. His lessons include the use of hands-on making activities, coding and robotics to over 900 K-6 students each week. Russell also runs lunchtime Minecraft, Robotics, 3D printing, Digital Arts and STEAM clubs and his students compete in design thinking competitions.

Russell has delivered technology for learning training and robotics webinars for teachers as a Microsoft Innovative Education Expert and NSWICTE Leader of the Year. He strives to drive change in education by providing more STEAM opportunities in classrooms through community-building events for teachers and student outreach in schools, makerspaces and museums. He has presented at EduTech and many other international conferences, judged Young Scientist, Inventors and Creators and LEGO FIRST competitions. Russell is part of the Macquarie University Junior Science Academy and an ambassador for many innovative educational technology platforms.