GATEWAYS
The BRAINWAVES Club

Term 2 2021: TECHNOKIDS– Years 3 and 4
Venue: Bondi Public School
Term Fee: $285.00

CODING CONUNDRUMS

Code, wonder, test and invent as you explore the world of computer science by getting creative with block coding tools Scratch and Microsoft Makecode We'll make brilliant 2D games, awesome personalised chatbots and learn how to bring our own ideas to life with code, all while learning fundamental computer science principals. TechnoKids will apply computational thinking powers to debug and problem solve, developing resilience as we learn how to appreciate failure as an important step on the road to learning and discovery!

1 May
Meeting 1: **What's the Catch?**
Focus: **Algorithms, Debugging, Variables**
So, what is coding anyway? Why is it so useful (and fun!) to learn? This week we'll explore why coding is one language you'll definitely want to know and then challenge ourselves to explore the Scratch interface by making a sneaky maze game. There'll be food to gobble and meanies to avoid as you make you way around the maze - but there's a catch! If you complete your game, there's another challenge waiting for you! Can you use variables to add a score counter to your game to keep track of the points you win along the way?

15 May
Meeting 2: **Chatty Chatbots**
Focus: **Conditionals**
Now you know your way around Scratch, let's look at some more cool things it can do. Did you know you can make your very own interactive chatbot, that you can have a conversation with? It's all thanks to the power of conditionals, or 'If' statements, which help your creations make decisions on their own. This week we'll explore how to help our creations react to what we type and maybe even share a joke or two!

29 May
Meeting 3: **MakeCode Makes Games!**
Focus: **Game Design Concepts**
Scratch isn't the only fun coding platform on the block! It's time to explore another coding language called MakeCode and explore how game designers create the fun arcade style games we all love to play. We'll get to know the MakeCode interface and learn about game design concepts such as characters like heroes and using co-ordinates. We'll practice using variables and random numbers to create unpredictable elements in our games and work though some fast-paced projects which will have you inventing and playing like a coding pro in no time. Finally, you'll choose your favourite game to focus on and develop further with your own creative ideas.

19 June
Meeting 4: **Ready to Race?**
Focus: **Side Scroller Games**
In this session we will explore how to make a Side-Scrolling Car Game. A "Side-scroller" is a type of game where the character moves mainly in the left or right direction and is viewed side on. You will explore the game theory behind building side-scrolling style games as you design a game where you control a car trying to escape a forest. You'll learn about creating backgrounds with Tilemaps and how to create winning and losing criteria. You'll finish by personalising your creation with additional characters and maps before learning how to export your game to share with others.

What to Bring:
Please bring a notebook and a well-stocked pencil case to each meeting as well as a hat, drink and snack for the break (no nuts please). Please also bring a laptop or iPad to each session and create a Scratch account here.

About the Club Leader: Alex Binskin
Alex is a technology educator and instructor at Flying Start Kids, as well as a game developer and programmer. He has spent the last 4 years creating games for computers, mobile and Virtual Reality. He is the Co-Founder and Lead Programmer at Sugar Coated Games, a game studio specialising in family-friendly mobile games. He is especially passionate about teaching kids how to code and make their own games. Recently he's been working with a company to create games for people with disabilities by using eye-tracking technology to give kids who can't use their hands a chance to still be able to enjoy and play games just like everyone else.