Maths on the Loose
Years 4, 5 and 6 - Term 3, 2021
Fee $108

Crypto On The Run *with Declan Cavanagh*

Imagine this: you lend your friend five dollars, and he pays you back with 500 Dogecoin. You laugh it off, and promptly forget you have it. Five years later, you find you've amassed a small fortune as each precious Dogecoin has mysteriously increased in value as it sat quietly in your digital wallet! What were the chances? How did this happen? Cryptocurrencies are hailed as the hot new asset to invest in, but many professionals say it's too risky – that the change in value can be so fast it's practically on the loose. In this workshop, you'll investigate how investors stay on top of the market through exploring the algorithms involved in forecasting the future value, working out the probability of what the prices will be and building a portfolio that fits the risk they want to take. Perhaps it's not so *cryp*-tic after all!

Declan has a background in mathematics and finance, and having worked for wealth managers he has a unique perspective on learning mathematical concepts. Currently, he tutors all age groups in mathematics and has found a love for teaching and learning. He approaches traditionally hard-to-grasp topics with interesting and relatable content for the kids and is very interactive and animated. Declan has a passion for stimulating the Eureka! moment in a student and being a part of the journey towards developing academic independence.

How To Ice A Donut: Graph Theory On The Loose *with Rob Brier*

Graphs (not the bar, column and pie sort – the other kind) can be found everywhere in life, from the internet to an electricity network. But they also appear everywhere in abstract mathematics. In this workshop we'll be exploring how graphs can be used to understand different types of surfaces, including donuts...! We'll explore a famous solution about colouring a map that was first proven by a computer, and indeed is still the only proof. We'll also show how to investigate the properties of complex surfaces without having to make 3-D models. These ideas have applications in the physics of the very small (string theory) and the very large (cosmology).

Rob is a mathematician by profession, with a Bachelor of Science and a PhD majoring in pure mathematics, and is currently doing a second PhD in the area of short-term weather forecasting. He has spent many years helping students at school and university to see the beauty of mathematics. He also has interests in philosophy and theology, and has spent several years doing grass-roots community work in West End and South Brisbane.

Mind Games *with Ash Reddy*

Can you navigate the traps and pitfalls of puzzles? Are you able to figure out your rival's next step before they make their move, and your chances of winning are on the loose? Using game theory, pattern recognition and spatial awareness, we'll solve a series of mathematical challenges using a chessboard that develop our tactical efficiency and critical thinking skills to beat our opponents. Along the way, we will craft concrete strategies that account for the predictable … and the unthinkable! Join us as we engage in a fun-filled workshop of mental agility training to stay one step ahead of the game. *For chess novice and experts alike – are you game?*

Ash runs a company called Chess Mates that teaches 2000 students on a weekly basis about how to play and improve in chess. Ash has a keen interest in emotional intelligence and is very excited about expanding your child's mathematical and logical mind in different directions.