



Maths on the Loose
Years 1, 2 and 3 - Term 3, 2021

Fee \$108

From Loose Change to Family Fortune with Michelle Emsley

The family finances are on the loose! Dad's discretionary spending is out of control, mum has made more than a few bad investments, and your sister has splurged on the latest and greatest gadgets. Dollars and cents – they all add up; and sometimes, a decimal out of place can spell disaster for a budget. As budding budgeteers, we need your help to put everything back in its place using your budgeting skills and by applying rigorous mathematical thinking to forecast future expenditure. Then it's time to turn all that loose change you've saved into cold hard cash. Buyer beware though, before you can get bang for your buck you need to consider *risk* – the probability that your investment will pay off or cost you more than you bargained for. Will you invest in shares, property, or keep your hard-earned money in the bank? Our Eureka is open for business and it is time to invest to impress.

Michelle has presented a broad variety of programs for G.A.T.E.WAYS. She is an experienced educator with over eleven years-experience and has a passion for gifted education. She developed a love of mathematics while working in the mainstream classroom and loves bringing maths to life, through working with real-life scenarios. Michelle loves nothing more than inspiring the mathematicians and problem-solvers of the future.

An Unbee-lievable Quest with Sandy Wong

It may surprise you to know that bees are nature's finest mathematicians! Their ability to calculate angles, make sense of different proportions in shapes and construct hexagons for their mathematically impressive beehives makes them experts in geometry! However, something is astray in the local school beehive – it seems that some of the bees have a very loose interpretation of a hexagon, it's truly *beewildering*! It looks like some of those bees have skipped a geometry lesson or two... or perhaps they're just *misbeehaving*! We need your help to get to the bottom of it! In this workshop, we will get hands-on with origami to visualise fractions, arithmetic, and geometry. We will develop our spatial reasoning skills as we discover how points and lines interact to form different 3D shapes. Can our mathematical thinking, problem solving skills and a piece of paper help us to restore the school beehive?!

Sandy learned paper art in her childhood as a gateway to fundamental mathematics. Today, she is a scientist and recently completed a Doctor of Philosophy (PhD) in Chemistry. Interestingly, her research also uses geometry to assemble different shaped nanoparticles as small as 0.0000001 metres in length, to deliver medicine. She is excited about sharing the hidden maths behind paper art to a keen audience.

Zoo on the Loose: From Chaos to Categories with Jane Jung

Eureka City Zoo is gearing up for its grand opening in just a few days, but disaster has struck at the eleventh hour and some of the animals are on the loose! They have managed to escape from their crates while being delivered to the zoo! Luckily, the zookeepers have successfully rounded them up before they could wreak havoc in the city. However, animals from all different types of habitats have been rounded up into one large cage and now they quickly need to be sorted into their separate homes before the zoo's grand opening. With the help of your mathematical logic and problem-solving skills, your job is to sort these animals into their right exhibits in time for the zoo's first group of visitors. We'll need to use our mathematical skills in set theory and Venn diagrams to classify things visually and then use notations to describe and communicate these classifications effectively... but we have to hurry because the clock is ticking!

Jane is enthusiastic about making maths fun and accessible to all. Although originally from a science background and currently completing a PhD in chemistry, she has a deep appreciation for the beauty of maths and the utility it has in our everyday lives. Over the last five years, she has been sharpening her skills as an educational communicator to a broad range of audiences through university teaching roles, involvement in local and rural school outreach events, and leadership roles in a mentoring capacity. She finds that there is nothing better than seeing children light up with excitement over discovering something new, especially if it's figuring out a way to overcome a challenging problem.