

SHOWCASE

All things mathematical

Sue Ditchfield, Monbulk College, VIC
Christian Rau, Monash University

Dr Christian Rau and Mrs Sue Ditchfield are utilising their MiS partnership to engage secondary students in a wide range of activities which demonstrate just how fun maths can be. Sue and Christian met for the first time at a Networking Workshop shortly after they were partnered. A few emails and phone calls cemented their plans before Christian went out to the school to introduce himself to the students.

Christian first spoke to the Yr 12 class about areas under curves, and then gave a wonderful presentation to the Yr 7 class about probability and statistics utilising lollies in his example. Christian used terms such as "the beauty of mathematics is ...", to convey his passion for maths. These talks were so successful that Christian was inundated with questions and more discussion at lunchtime. Two Yr 12 students wishing to go on to engineering were listening to every word with awe.



Christian demonstrates Fibonacci sequence using a pawpaw



Student bridge-building team

On another occasion, Christian assisted the Yr 7 students with bridge building. Teams consisted of a Company Director to oversee production, a Media Consultant to record and prepare a presentation, an Architect and an Accountant. Each team was given \$1,500,000 to buy everything including land, toothpicks, glue, and string and so on. Interest was added each day and inflation often forced prices go up. Christian provided a very interesting presentation on preferences and ranking. This presentation helped the teacher judges to determine which teams were bridge building winners!

Christian returned recently to present a session to the Yr 7 students on Fibonacci. Christian demonstrated where the Fibonacci sequence occurs in nature using a pawpaw which has a five ray shape in the seed compartment.



Students work on spiral tiling technique

He also played a game using marbles in which students each received different quantities of marbles in beakers and had to take them from each other to form the Fibonacci sequence.



Using marbles in beakers to form the Fibonacci sequence

Lastly, the students were given graph paper and highlighters and Christian showed them how to form a Fibonacci spiral. Christian stayed on to mentor some talented Yr 12 maths students in their preparation for a calculus exam.

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