

## Recreational Mathematics and its History: A workshop in memory of David Singmaster

Saturday 21<sup>st</sup> September  
De Morgan House, Russell Square, London

10.15	Welcome	
10.30	Katie Steckles	<i>The Maths of Rubik's Cube</i>
11.00	Adam Atkinson	<i>Debunking and "improving" an obscure Italian gambling myth</i>
11.30	Break	
11.45	Peter Rowlett	<i>Recreational mathematics in education</i>
12.15	Vinay Kathotia	<i>How do shapes fill space? Aperiodic tilings – spectres, tortoises and all hat...</i>
12.45	Lunch	
14.00	Robin Wilson	<i>David Singmaster: Friend and combinatorialist</i>
14.30	Colin Wright	<i>David Singmaster: Personal memories of the man and his maths</i>
15.00	Break	
15.30	Tiago Hirth	<i>The French Sphinx</i>
16.00	Lisa Rougetet*	<i>Why take an interest in mathematical recreations? An historical overview through a mechanical puzzle: the Baguenodier</i>
16.30	Closing Remarks	
16.45	End of Day	

\*This talk will have an interactive component that may make it less accessible to online participants. All other interactive elements will be aimed at both in-person and remote participants.

### Abstracts

#### Adam Atkinson: *Debunking and "improving" an obscure Italian gambling myth*

In the late 90s, Corrado Giustozzi's recreational maths column in the Italian computer magazine MC-Microcomputer and Francesco Romani's *Mathematica* column in the same issue hosted articles about an Italian gambling myth called the Samaritani Formula, which dates back to the 1930s. It is almost unknown outside Italy, and obscure even in its country of origin.

Since I still get occasional angry emails about these articles over 20 years after they appeared, it seems useful to try to explain better than its proponents do how the Formula is useless for winning the Italian lottery but not the total nonsense it may appear at first sight.

Tiago Hirth: *The French Sphinx*

Martin Gardner is said to have helped recreational mathematics expand into a major research area. This presentation is not about Gardner. It is not about David Singmaster either, who majorly helped expand recreational mathematics in the history of mathematics. Instead, we will explore the francophone recreational mathematics scene between the World Wars, led by Maurice Kraitchik. Kraitchik's periodical *Sphinx* is considered the first academic publication dedicated to recreational mathematics. Similarly, the Congrès International de Récréation Mathématique followed suit, having no known precedent. Kraitchik's *Mathematical Recreations* from 1942 introduced the subject to a new audience, gaining popularity and interest in mathematical circles in both Europe and the United States well into the 1960s. Some of these ideas, familiar to later generations of mathematics enthusiasts, will be shared in a hands-on manner through puzzles and problems. Constructive interjections from knowledgeable audience members are very welcome during the talk.

Vinay Kathotia, Charlotte Webb, & Reem Yassawi: *How do shapes fill space? Aperiodic tilings – spectres, tortoises and all hat...*

In this hands-on workshop, we will explore the extraordinary world of aperiodicity through completing tiling challenges and creating your own tiling patterns. You will have the opportunity to play with physical aperiodic tiles, as well as exploring them through a computer app.

Lisa Rougetet: *Why take an interest in mathematical recreations? An historical overview through a mechanical puzzle: the Baquenodier*

In this presentation, I propose to explain what is meant by "mathematical recreations". This singular expression covers different periods, different aims inspired by different objectives, developed by different types of actors. These enterprises shape and mobilise multiple types of mathematical knowledge, and even multiple types of materiality. But these "recreational" practices all illustrate forms of mathematical life (most often outside the academic world) and they are interesting enterprises that the historian cannot consider apart from more academic mathematical research. I will try to illustrate this diversity of practices through a few examples, focusing in particular on a mathematical recreation of the mechanical puzzle type: the Baquenodier.

Peter Rowlett: *Recreational mathematics in education*

At a meeting of the Undergraduate Mathematics Teaching Conference (UMTC) at Sheffield Hallam University in 1999, David Singmaster gave a talk and hosted a working group on 'Teaching Mathematical Concepts Using Puzzles and Games'. This talk will consider the role of recreational mathematics in education at all levels and describe the implementation of these ideas in an undergraduate module on 'Game Theory and Recreational Mathematics'.

Katie Steckles: *The Maths of Rubik's Cube*

Rubik's cube is a hugely popular puzzle toy, and its iconic squares and distinctive colours are instantly recognisable. But the cube also holds a deep mathematical beauty, and some of the first people to fully analyse it and understand its incredible structure were mathematicians - including David Singmaster himself.

Robin Wilson: *David Singmaster: friend and combinatorialist*

In this talk I shall reminisce about my 50-year friendship with David and the common interest that we had in combinatorial mathematics. In particular, I shall talk about his specific contributions to an Open University course in combinatorics.

Colin Wright: *David Singmaster: Personal memories of the man and his maths*

Having spent many hours in David's company I am left with a gentle awe at his kindness and generosity, profound sadness at his passing, and fond memories of our conversations. In this talk we will hop about madly between puzzles, games, maths, and stories. It seems fitting.