

Games used at the Maths Arcade

Peter Rowlett

Nottingham Trent University

`peter.rowlett@ntu.ac.uk`

`@peterrowlett`

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What is a Maths Arcade?

- ▶ Weekly drop-in session where staff and students play strategy games, for:
 - ▶ maths-themed social environment;
 - ▶ informal support;
 - ▶ develop mathematical thinking.
- ▶ Initiated by Noel-Ann Bradshaw at University of Greenwich.
- ▶ Now at several universities, including mine (Nottingham Trent).
- ▶ More information on the IMA website:
bit.ly/mathsarcade

Summer project

- ▶ 'Evaluation and development of the Maths Arcade initiative at NTU and nationally'.
- ▶ Completed by Kingsley Webster (Nottingham Trent)
 - ▶ in collaboration with Noel-Ann Bradshaw (Greenwich) and James Hind (Nottingham Trent);
 - ▶ funded by Nottingham Trent's Scholarship Projects for Undergraduate Research (SPUR) scheme.
- ▶ Aims:
 - ▶ to evaluate the Maths Arcade at Nottingham Trent and other universities.
 - ▶ to prepare information sheets about the games, including indicating mathematical content.

Evaluation

- ▶ Planned at meeting at Sheffield Hallam University.
- ▶ Questionnaire for students — mostly completed on paper during lectures to capture views of attenders and non-attenders.
- ▶ Data returned by Nottingham Trent, Greenwich, Sheffield Hallam, Reading & Salford.
- ▶ 295 responses; 125 had attended their Maths Arcade.

Findings

Generally speaking:

- ▶ Half of students reported making friends at the Maths Arcade, significantly more likely to say 'yes' if they attended more often.
- ▶ Majority of students wanted to see more staff at the Arcade.
- ▶ About 40% of students agreed the Maths Arcade helped them academically (but how do they know?).
- ▶ What would encourage more attendance (free-text)?
Better time slot and free food.
- ▶ Best things about the Arcade (free-text):
games; social environment.
- ▶ Worst things about the Arcade (free-text): time slot.

Most popular games

90 responses:

- ▶ Differs per university.
- ▶ Overall winner:

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- ▶ Differs per university.
- ▶ Overall winner: Quarto.
- ▶ For those who attended less frequently: Blokus.

Game info sheets

- ▶ Blokus;
- ▶ Callisto;
- ▶ Cubulus;
- ▶ Hex;
- ▶ Inside;
- ▶ Knight Moves;
- ▶ Oshello/Reversi/
Othello;
- ▶ Pentago;
- ▶ Pylos;
- ▶ Quarto;
- ▶ Quixo;
- ▶ Quoridor;
- ▶ Solomon's Stones;
- ▶ Stratum;
- ▶ Tantrix.

Will be available via bit.ly/mathsarcade

Final thought

- ▶ I have two students doing final year projects on combinatorial game theory:
 - ▶ one looking at Nim-like games;
 - ▶ the other at Noughts and Crosses-like games.
- ▶ I would be delighted to hear any interesting variants.

- ▶ Thank you for listening.
 - ▶ Peter Rowlett, Nottingham Trent.
 - ▶ peter.rowlett@ntu.ac.uk.
 - ▶ peterrowlett.net.
 - ▶ [@peterrowlett](https://twitter.com/peterrowlett).
 - ▶ Maths Arcade: bit.ly/mathsarcade