

# MiS Presentation

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- ➊ Initial Decisions
  - Context
  - Aims
  - Format
  - Content
- ➋ Session 1: Introduction
- ➌ Session 2: Möbius Strips
- ➍ Session 3-4: Statistics
- ➎ Session 5: Coordinate Grid
- ➏ Session 6: 1-2 Nim
- ➐ Evaluation

- This project was conducted in partnership with Our Lady and St Thomas catholic school (OLST).
- OLST is a co-educational primary academy located in Willington for students aged 4 - 11.
- OLST is a small school with only on class of 18-20 students per year.

- Initial consultation with teacher
  - Increase confidence in girls ability in maths
  - This goes hand in hand with decreasing maths anxiety in girls
  - In the long term this could possibly increase performance in girls, increasing number of girls achieving 'Greater Depth' in SATs
- Focus on increasing confidence and decreasing anxiety
  - Nationally girls perform at a very similar level to boys in SATs (Gov.uk, 2024)
  - Women are more than twice as likely to experience maths anxiety than men (National Numeracy, 2024)
  - Boys tend to believe more than girls do that their intellectual abilities are causing their high marks in maths (Georgiou, S. N. et al, 2007)

- Lunch time sessions about 30 minutes long
- Only girls in the session
  - In mixed classrooms boys are more likely to speak louder and overpower the class
  - Girls are not going to worry about what boys think of them
- The content of the sessions is not defined by the aims.

The aim of this project is very individual, it is

- What is the level of maths anxiety among the girls?
  - All girls reported some level of anxiety
- What are the causes of maths anxiety?
  - Judgement
  - Fear of being left behind
  - Frustration
- How can these causes be treated?

## Session 2: Möbius Strips

- Design:
  - No numbers
  - Focus on the process rather than the outcome
  - Intrinsic value intervention
- This session involved the girls constructing and exploring the physical properties of a Möbius strip
- The aim of this session was to allow the girls to enjoy the process of exploring new ideas and not understanding something



Figure: Möbius Strip

# Session 2: Möbius Strips

- The session consisted of 3 main activities
  - ① Creating the Möbius strips
  - ② Drawing on the Möbius strips
  - ③ Cutting the Möbius strips
- Evaluation
  - The session definitely promoted curiosity and creativity (maybe a bit too much)
  - Some of the activities were too fiddly



# Session 3: Statistics - Data collection

- Design:
  - Utility value intervention
  - Getting comfortable discussing maths
- ① What is statistics?
  - How do we collect data?
  - How do we analyse data?
  - Why is statistics useful?
- ② Students collecting their own data
- ③ Talking about maths at home

# Session 4: Statistics - Data visualisation

- Why do we visualise data
- Creating their own data visualisation
- Physical representations of statistics

- Why do we visualise data
- Creating their own data visualisation
- Physical representations of statistics
- Evaluation:
  - Students developed understanding of basic statistics
  - Didn't create as much discussion around mathematics as planned
  - Mode of delivery was very similar to a lesson

# Session 5: Coordinate Grid

# Session 6: 1-2 Nim

# Evaluation