MiS Presentation

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March 18, 2025

Contents

Context

- This projcect 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.

Aims

- Inital consultation with teacher
  - Increase confidence in girls ability in maths
  - This goes hand in hand with decreasing maths anxiey in girls
  - In the long term this could posisbly increase performance in girls, increasing number of girls achieving 'Greater Depth' in SATs
- Focus on increasing confidence and decreasing anxiety
  - Nationally girls peform 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)

Format & Content

- 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.

Session 1: Introduction

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 girs to enjoy the process of exploring new ideas and not understanding something

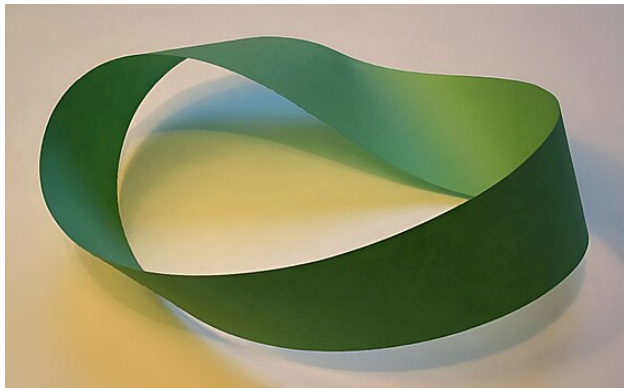

Figure: Möbius Strip

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 strups

- Evaluation
  - The session defnitely promoted curiosity and creativity (maybe a bit too much)
  - Some of the activites were too fiddly

Session 3: Statistics - Data collection

- Design:
  - Utility value intervention
  - Getting comfortable disussing 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

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- 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

- Deisgn:
  - Change mode of delivery
  - Make the session activite
  - Incorperating cooeprative groups in problem solving situations
- This session involved the students solving problems which would lead them from point to point on a coordinate grid
- The mathematics required was taken from lessons I had seen the students complete
- Each student had to solve one clue to lead them to the final anwer
- Evalutaion:
  - Students were very eager to solve clues
  - Students didn't understand coordinates as much as hoped
  - The problems given were effective reivison for the children - "We had to do really difficult maths that we learnt ages ago"
  - Sacrifised quantity of learning for enjoyment

Session 6: 1-2 Nim

- Design:
  - Student ownership, developing their own tool they can use in the future
  - Students work together and share their solutions
- This session involved the students developing their own strategies for a simple game
- This task generalises allowing students to learn some basic problem solving strategies
- Evaluation:
  - Students were keen to complete the task as they wanted to beat me
  - Some of the more uninterested students seemed to benefit from this type of session

Session 6: Talking about maths confidence

Evaluation