

MTH 348 Project

The Background

Despite the fact that most people believe that mathematics is an important subject, some people may not know what mathematics is really about. People often (jokingly) ask if I know how to count really high or if I just look at equations all day. As a mathematics major, you know that this isn't true (how often do we solve equations in combinatorics?). I feel that we (in the mathematical community) are somewhat to blame for this. We often don't communicate to the public what we do or at the very least we don't always communicate in a way that is engaging. Other sciences and arts seem to have done a great job engaging the public with their field through popular general audience books (e.g. Hawking's *Brief History of Time*), through public speakers (e.g. Carl Sagan or Neil deGrasse Tyson), and through museums (e.g. Louvre Museum in Paris)¹. It is this last method on which this project is based on.

The Project

You will create a museum exhibit that explains some topic from combinatorics to the general public. It is **very** important that your exhibit be understandable by the general public. Do **not** include mathematical jargon or proofs. Your exhibit should be self-contained in the sense that you don't need someone to be there explaining it. Also, you don't have to pick a deep topic in combinatorics, it can be anything that you can explain to the general public. The exhibit should be engaging, you want people to care about your exhibit! How you want to set up the exhibit is up to you. However, do not make it too small or too big. Talk to me if you are worried about the size. Interactive exhibits are always nice, but this might not be possible based on what you are doing.

However you decide to make the exhibit, you must also submit a 1.5-2 page (double spaced) summary which explains how you expect the audience to interact with the exhibit and the mathematics behind it.

You **must** work in groups on this project. The groups can have 5-10 people.

Grading

The total project is worth 100 points. The actual exhibit is worth 45 points, the summary is worth 45 points, and the email updates (see below) are worth 10 points. I am grading the exhibit based on how accessible, engaging, and creative it is.

Regardless how much actual work is being done by each group member, the grade received will be the same for each member. Keep this in mind when forming your groups.

Extra Credit

You will have the opportunity to receive an extra 20 points of extra credit for this project. To receive the extra credit, you will show your exhibit to the general public. I will let everyone know when this will be scheduled later in the semester.

Dates

October 27: By this date, one person from each group needs to email me telling me who is in their group and what their exhibit will be about. (5 pts)

November 8: By this date, one person from each group needs to email me telling me their groups progress on the project. (5 pts)

November 20: The project is due.

References

To get inspired, you might consider looking at the website for The National Museum of Mathematics.

¹There do exist museums dedicated to mathematics, but as far as I know there is only one in North America called The National Museum of Mathematics. It is located in New York City, NY.

Another resource might be this blog post (<https://mathenchant.wordpress.com/2015/07/15/the-lessons-of-a-square-wheeled-trike>) which talks about the museum's most famous exhibit.