MAT 115 Project

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Taking inspiration from Mathemalchemy, I wanted to make my project a physical environment that’s constructed out of mathematics. I wasn’t sure exactly what I wanted to do with this idea, but one day when I was driving home from school I noticed a transmission tower. The triangular structure of metal beams reminded me of Sierpinski’s triangle. This connection led me to decide on a landscape with a transmission tower and some buildings.

I created the base for the project out of some cardboard from a box we had lying around. From there, I used a marker to draw out what I wanted in the project and where it would go. I wanted to make as many elements of the project as possible mathematical in some way.

I tried to make the project look clear and appealing while still being composed of mathematics. The brick wall all around the background is a D2kgkg pattern from the 17 wallpaper groups, and the clouds above it are made to resemble Koch fractals. Based on what originally inspired this project, there is a transmission tower that is also a 3 dimensional Sierpinski triangle. In the front of the grass is a road with an R1 Reidemeister twist.

The part I like the most about this project is the building in the corner. I wanted to have a building or two, but I didn’t know how to make it mathematical. That’s when I remembered Hilbert’s Hotel. While I couldn’t make an actually infinite miniature building, I covered the roof in black to show that this model is simply being cut off, and that the hotel in actuality would reach infinitely into the sky. Next to Hilbert’s Hotel is an infinite school bus. I imagine that it looks like a regular school bus on the outside, but with an infinite amount of space on the inside.

While making this project I’ve noticed that I have a particular interest in fractals. Something about how an infinitely repeatable sequence, a world within a world, comes together to make a beautiful piece of art is really fascinating to me. There are also so many ways to make fractals, meaning that the possibilities are (much like fractals themselves) endless.

I wanted to have some 3d fractal bushes scattered around on the grass, but due to limitations with time and resources, I wasn’t able to. I think it would have been a nice detail but the piece still has enough going for it to be an interesting and pretty piece of mathematical art, and it would probably feel right at home being placed somewhere in Mathemalchemy’s world.