Math and Architecture

What are connections between math and architecture?

- Symmetry
- Proportions
- Scale
- Geometry
- Layering
- Nature
  - Landscapes (built and natural)

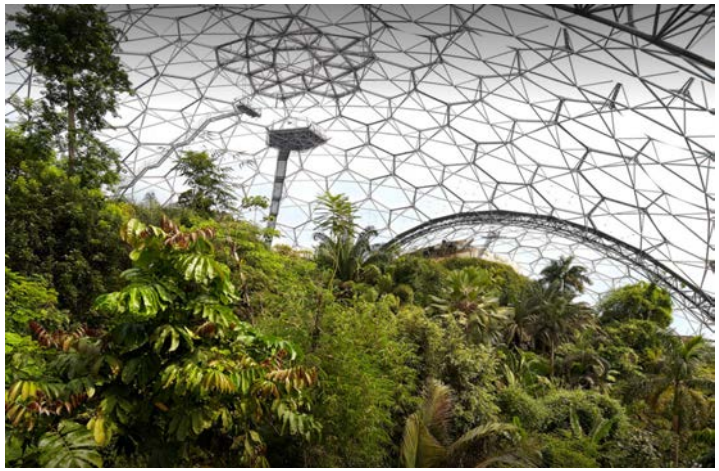
Architecture Mobius Strip

- Buddhist temple designed by an architect who wanted to symbolize reincarnation.
- Does this remind you of anything we talked about in class?
- How does this connect to the Mobius Strip activity we did together?

http://flavorwire.com/330293/10-amazing-examples-of-architecture-inspired-by-mathematics/2

Fibonacci Numbers

- World's largest greenhouse and education center
- England



http://www.edenproject.com

Geometry

- Cube village
- Dutch Architect: Piet Blom
- 3 levels with windows at the top facing every direction

Landscape and Geometry

- Math and design

- https://nj.pbslearningmedia.org/resource/f79f2801-256b-4ddf-ba0d-0567845408f9/f79f2801-256b-4ddf-ba0d-0567845408f9/#.WOz-IFKZNE4

La Sagrada Familia

- Hyperbolic paraboloid structures (Pringles)
- Magic Square (in this building the magic number is 33)

La Sagrada Familia

- Catenary arches (a geometric curve)
- Scale models – created from chains and weighted string
- Optimal Arches

Fractals

- Los Angeles gas station
- “Green” building
- Recycled materials and a plant-covered roof complete the enviro-friendly revamp.
- What mathematics from class does this represent?

Music

- Inspired by a violinist
- Home and concert space
- Named the **Integral House**
- Home owner: calculus professor who wanted math to be reflected in his home.

https://youtu.be/V5tUM5aLHPA

Exploring Math and Architecture

- What are things in your experience that connect math and architecture?

The Architecture of Montclair State

- Find examples of math in the architecture around campus
- What types of things can you look for?
  - Symmetry
  - Proportions
  - Scale
  - Geometry
  - Layering
  - Nature
    - Landscapes (built and natural)