# A Roller Coster of Events

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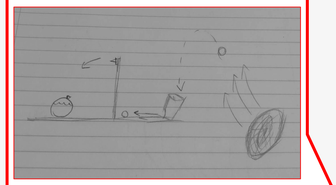
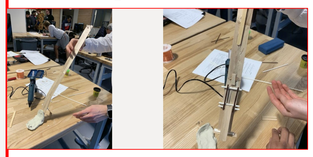
3+ 2 Engineering

## RG V1

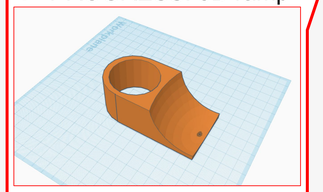
- Original RG setup



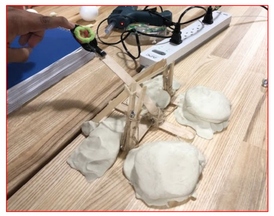
  - Ramp built for original sketch



- PROGRESS: 3D ramp



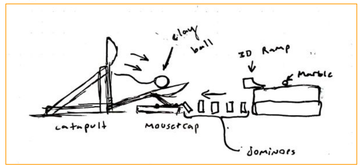
- *NEW DESIGN!*
  - No water balloon… catapult



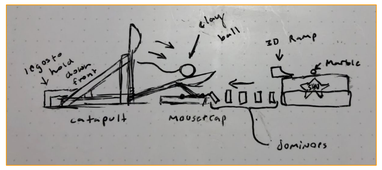
- Issues…
  - Not accurate
  - Hand release

## RG V2

- Original RG V2 setup



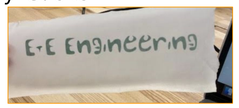

  - *What is NEW?*
    - Mousetrap
    - Dominos
  - ADDITIONAL REQUIREMENTS!
    - Need to include:
      - Legos, dominos, 3D design, laser cut piece, & vinyl sticker
    - *Design 1*




- In action…
  - Lego Design & 3D ramp

  - 2D Ramp

  - Vinyl Sticker




- *FINAL PRODUCT*

**What I learned…**

**3D Printing**
- Use TinkerCAD to design
- Make sure everything is supported on design
- PLA vs ABS

**Laser Cutting**
- Use InkScape to design
- Engraving & Cutting
- Vector File

**Vinyl Cutter**
- Use InkScape to design
- Vector image

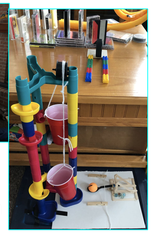


E-E Engineering

## RG New World

- Original Idea / Materials:
  - My original idea was to have everything on the white poster boards. I wanted to keep the design vertical and have a lot of pulleys and levers to move the ball up and down ramps…
- Initial building
  - I realized quickly that my original design was unrealistic because the boards were not sturdy enough… so I resorted to my fireplace mantle and got creative…

- Second Week
  - Pool noodles and video tapes
  - Made a pulley and platform for the catapult to release ball…



- Issue!
  - Cup doesn't always land on scissors…

*RESOLUTION…*
Add more surface area
- FINAL PRODUCT

## Summary

Heading into this class, I didn't even know what a RG was. When heading into V1, I was lucky enough to collaborate with my partner. Although our original design wasn't anything near to what actually was made, it was a start…

V2 was a much better success in terms of functionality. We stuck to most of our design; however, there were still things we would've liked to improve like the accuracy of the catapult and size of the vinyl sticker.

COVID-19 changed my life drastically. I was super fortunate to have all the materials and machines I needed at SHU. At home, I don't have any of the machines, making it a challenge.

Similar to RG V1, RG NW was nothing like the original sketch. I think it came out way better than my original thought! It was, in my opinion, the most time consuming RG of all three versions, but definitely worth it!

## COVID-19

I never expected COVID-19 to make such an impact on the World as it is today. It feels as though I've been in isolation for months, when in reality it's only been about 3 weeks. Our class originally was planning on building a RG using our new skills (3D printing, laser cutting, vinyl cutter) and displaying it at Maker Faire; however, we got an email from Dr. Petillo urging us to go home…

Immediately, I was bummed. I was excited to use the machines in hopes of building a new RG with the class, but now I had a different task. I had to build my own RG at home. I found it very challenging at first. I didn't have my classmates right there to collaborate with me, or the fancy machines and tools at SHU Makerspace.

As the weeks went on, I slowly, but surely found more materials in my house that would help my RG NW…