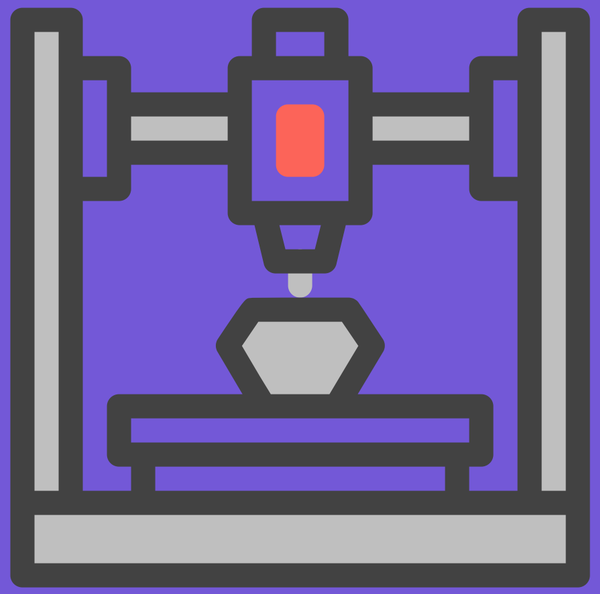

KNIGHT
SOCIETY

WHAT IS KNIGHT SOCIETY?



Knight Society is a learning experience in 3D printing for 4th through 6th grade girls.

We are a grant-funded program from Greater Cincinnati STEM Collaborative.

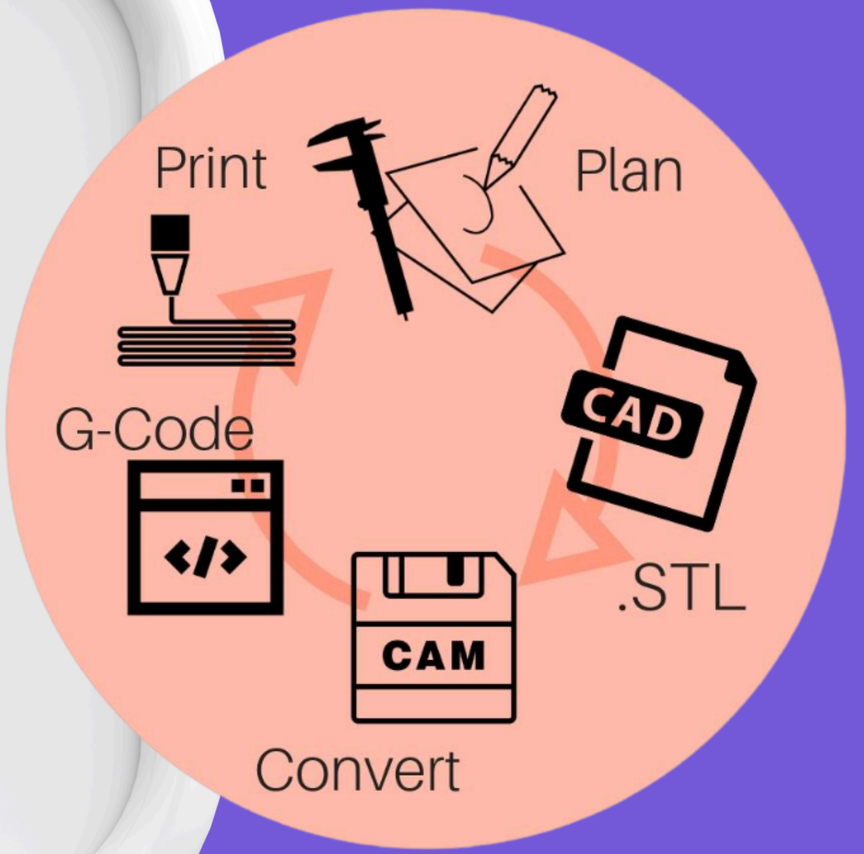
We learn how to 3D print and the background of female inventors.

LEARNING ABOUT ENGINEERING

- First, come up with a plan or idea that you would want to do.
- Second gather research and measurements you might need
- Up next, you need to create the design and prototype
- And last but not least figure out if you need to improve it and print the design and enjoy!

LEARNING ABOUT 3D PRINTING

- We first plan our design with sketches and playdoh
- We create our design in Tinkercad
- Download the STL file
- and use Cura to convert it to g-code that the printer can read



Process

5TH-6TH GRADE

OUR FIRST PROJECT SKILLS

01 HOW TO MEASURE

02 FAMOUS INVENTORS

03 HOW TO CHANGE THE SHAPE'S MEASUREMENTS

04 HOW TO STACK AND COMBINE SHAPES

We learned about Margaret Knight, she was the first female patent holder. She started inventing things at age 13. Our club is named after her.

We designed logos for the club.

This one shows the paper bag machine Margaret Knight invented.

Our first project skills

01 How to measure

02 Famous inventors

03 How to change the shape's measurements

04 How to stack and combine shapes

4th Grade

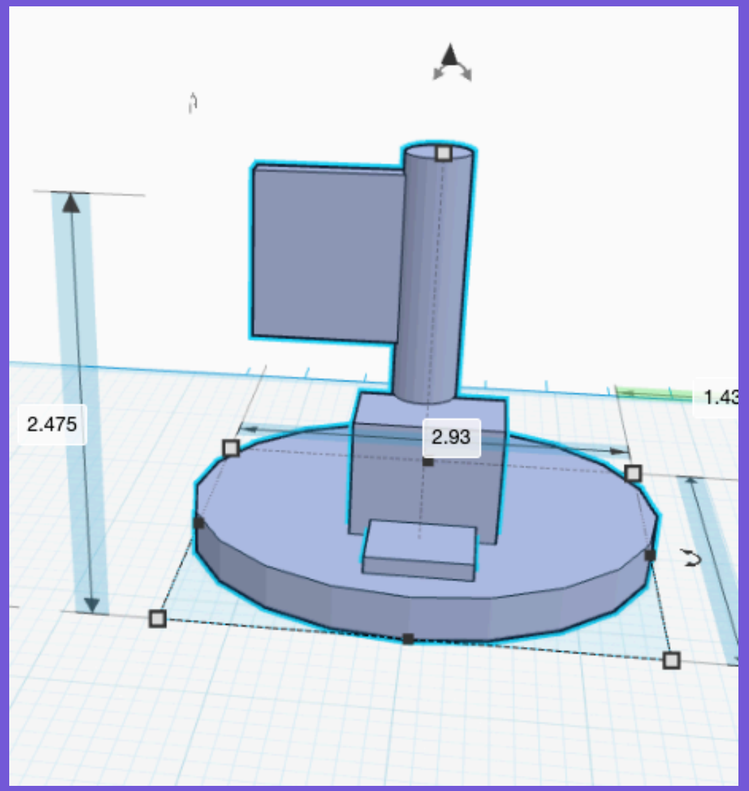
We learned about famous female inventors and designed a symbol that would fit into a base that we measured.

Some exampes of the people we researched were:

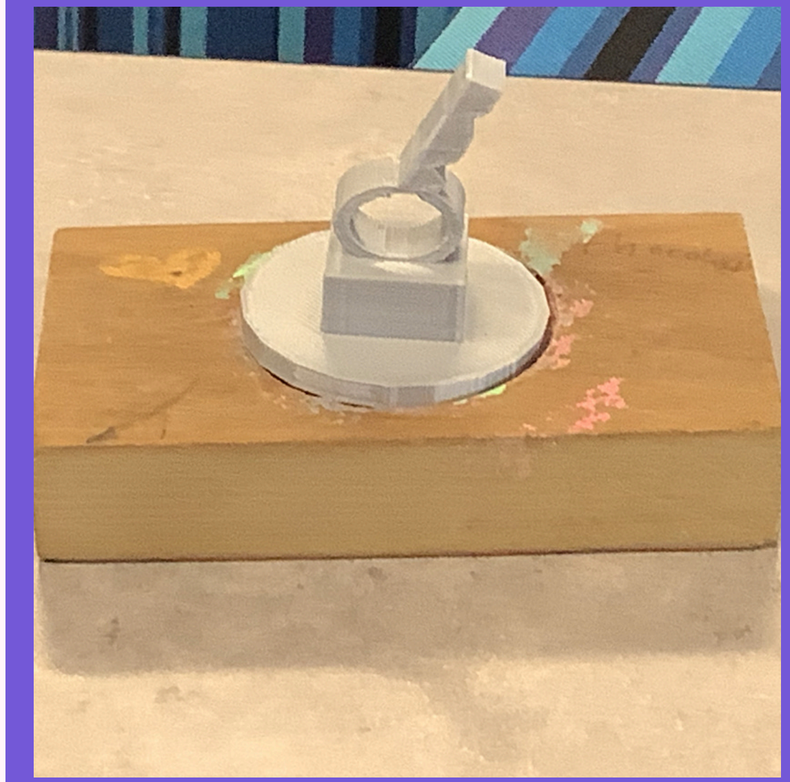
- Ruth Wakefield
- Grace Hopper
- Alissa Chavez

Some of our projects

1 Grace Hopper



2 Alissa Chavez



3 Ruth Wakefield

Second Project: Choice

1. **Car**
2. **Invention**

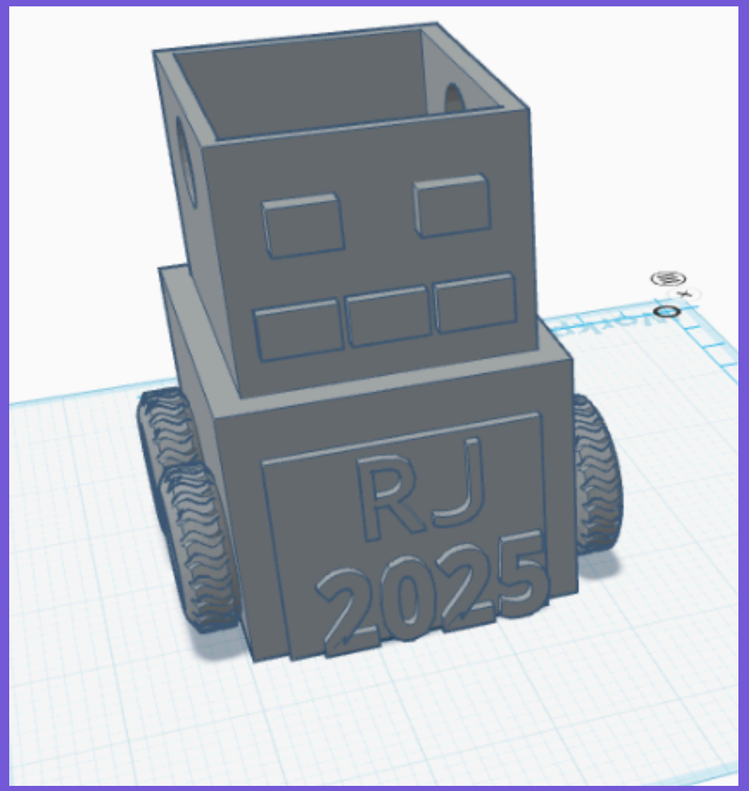
   Inventions could solve a problem OR be something that would inspire a business

RJS DESIGN

My design is a robot bag and a cookie cutter. The bag is a baking kit, which holds baking tools and the cookie cutter.

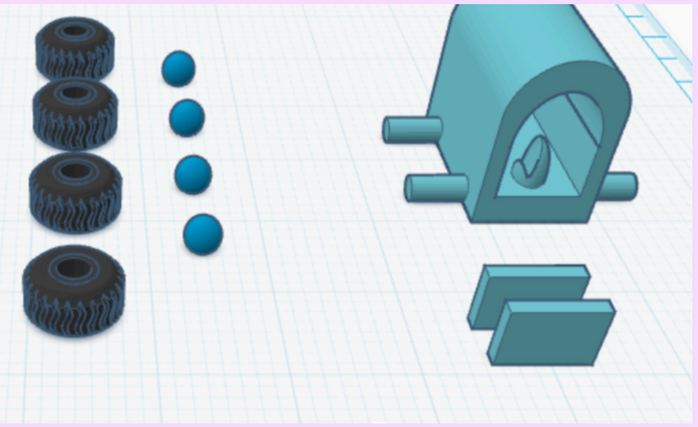
ROBOT

1 ROBOT IN TINKERCAD

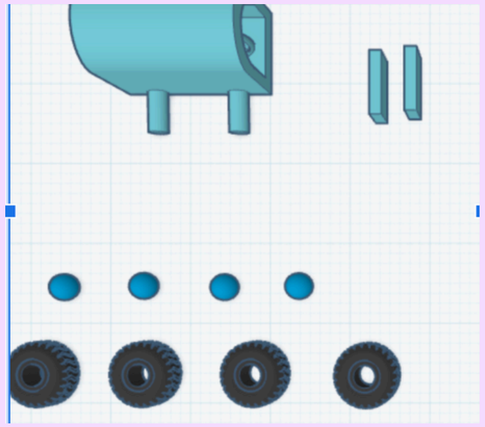


2

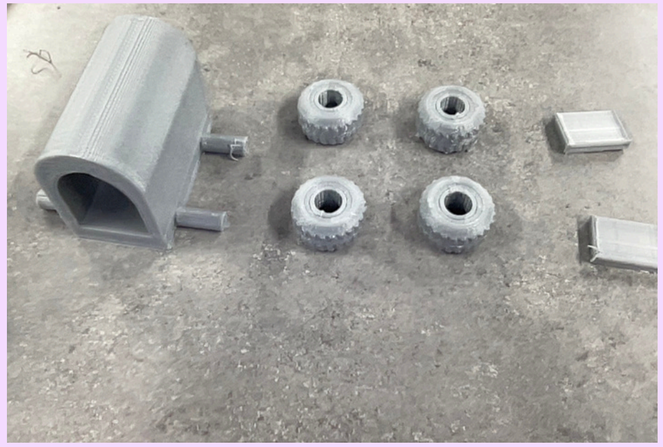
The Modern Conestoga Wagon



Our full design was based off a colonial Conestoga which made its way into our design by the open front and back and the curved roof, which we applied a clean modern twist.



We made room for a rubber band engine in the middle of the wagon.



We missed calculatored and the doors don’t fit and the little spheres didn’t print.

FINAL

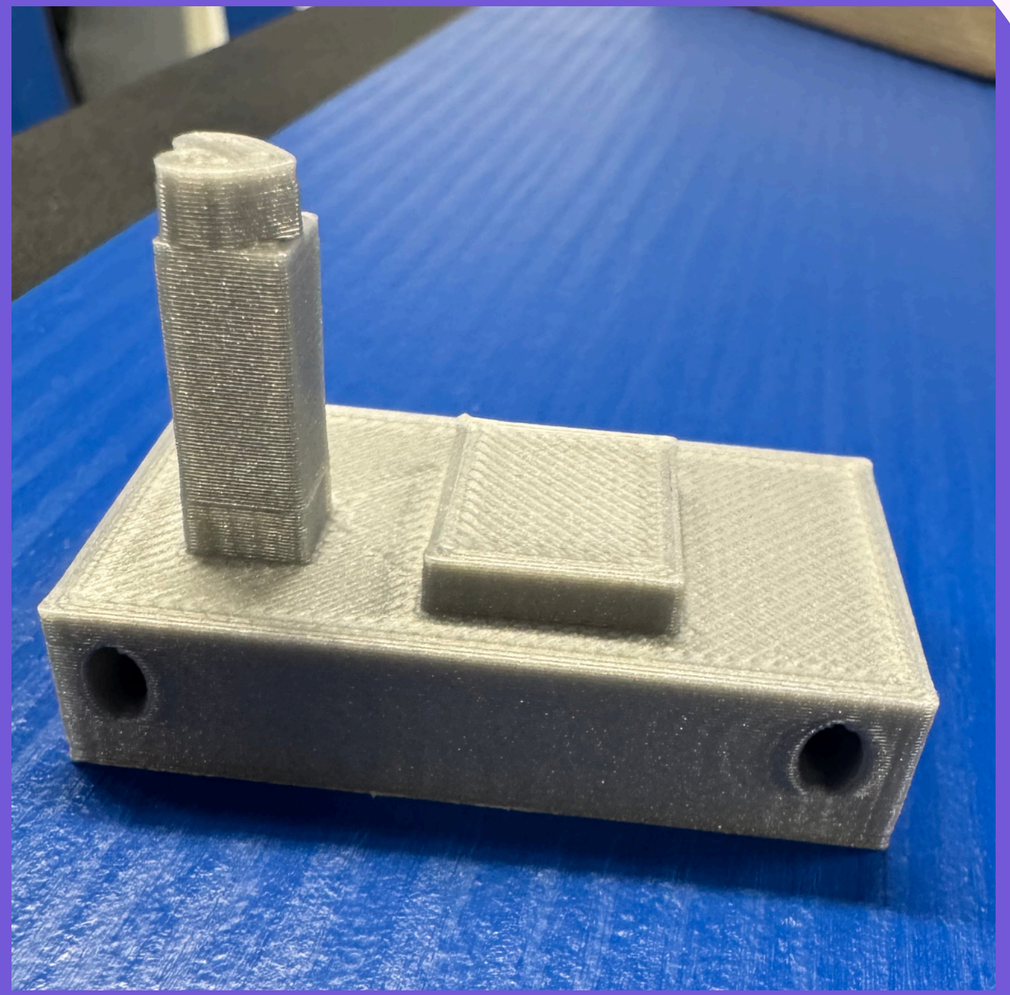
Since the spheres didn’t print, we used a 3D pen to make sure the wheels stay on.

Scooter

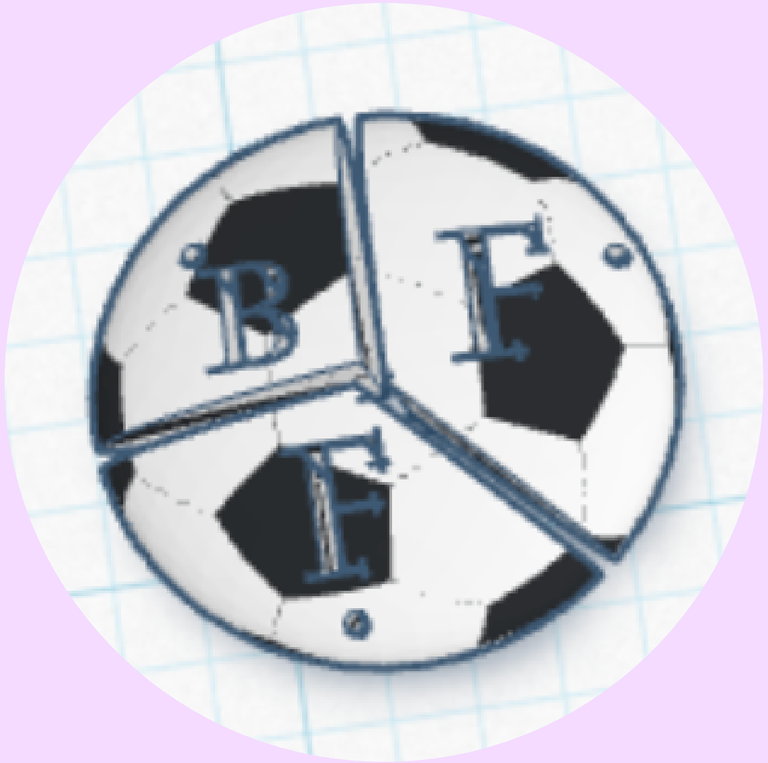
Small scooter with holes for the Lego pegs and wheels

Challenge

The holes didn’t print correctly - the first time they were too small



Custom Jewerly



Custom Charms

Based on a person's insterests

BFF Charms

For more than two friends

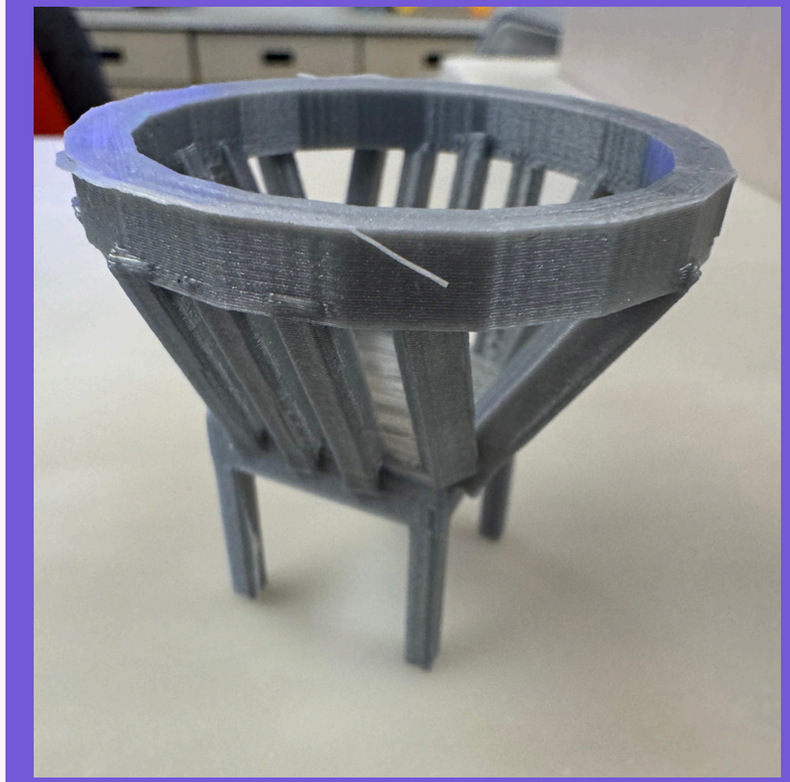
Challenges

Correct Size

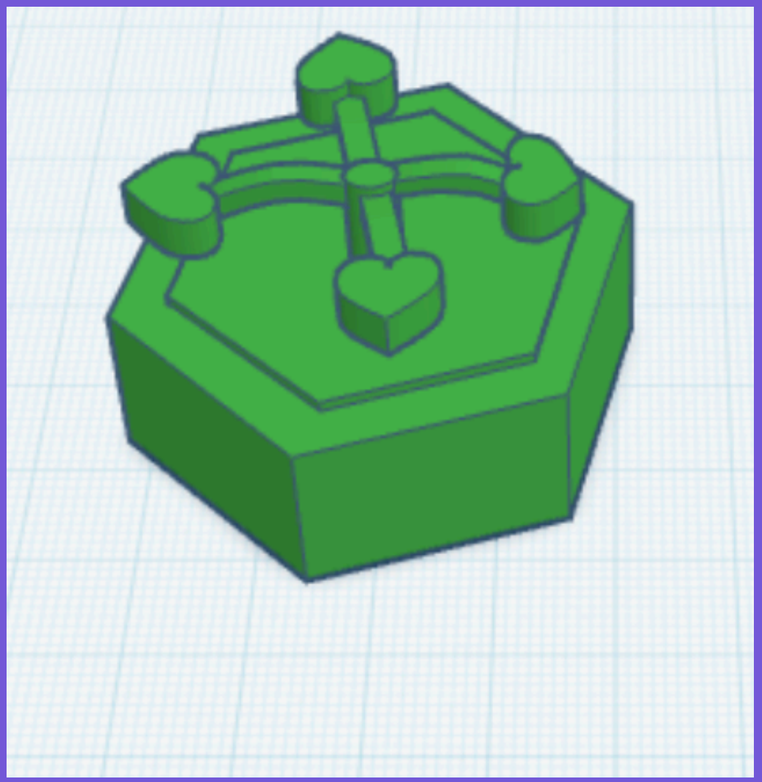
Businesses

1 Candy Mold

2 Dice Holder



3 Custom Plants



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THANK YOU!