

2211A KHU Inventors

Modular Vex Parts Organizer



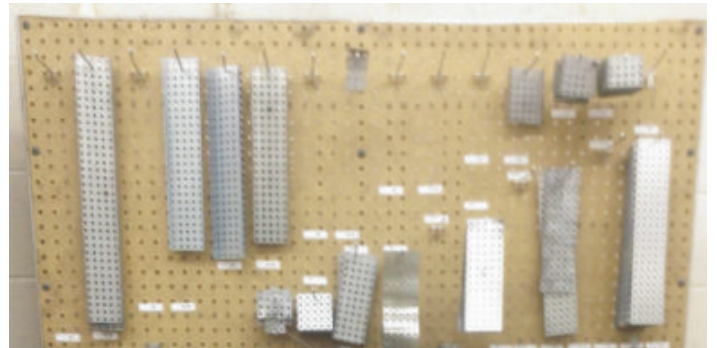
Problem:

When building a robot the accessibility and organization of parts can be a challenge. This makes the building process more difficult. Another common problem is the storage of previous game elements that accumulate throughout the years. To solve both issues we decided to create a vex parts organizer with old game elements that can be portable and set up in different ways.

Research:

We investigated different types of organizers and gathered the parts that we have to evaluate the space needed to organize them. We decided to build a shelf to store parts and something to organize metals.

Ideas:



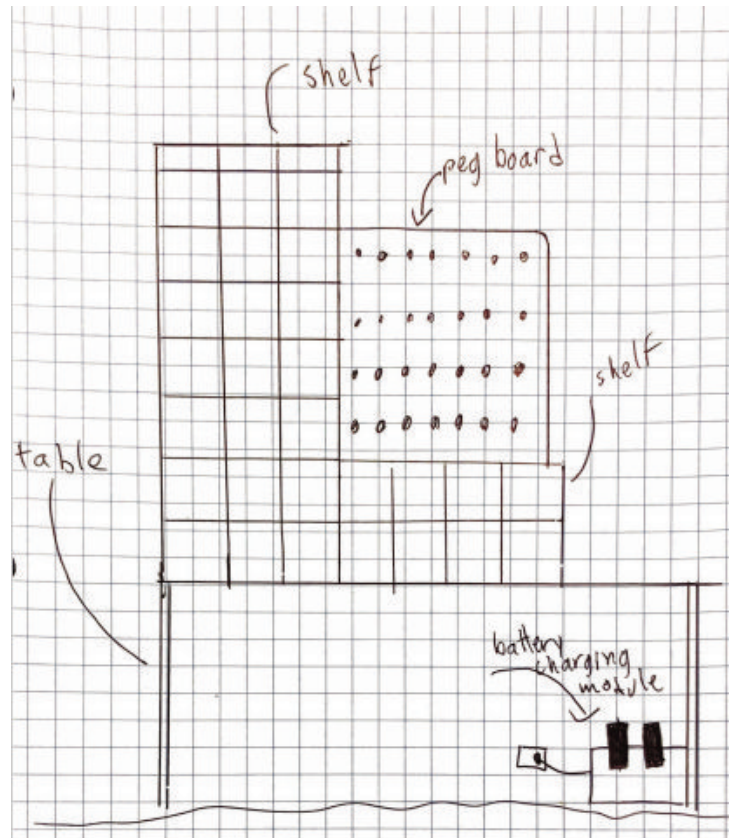
Design:

We made sketches of how we wanted the organizer to look like. Then, we gathered all the VRC game objects that we have and analyzed how to transform them in our design.

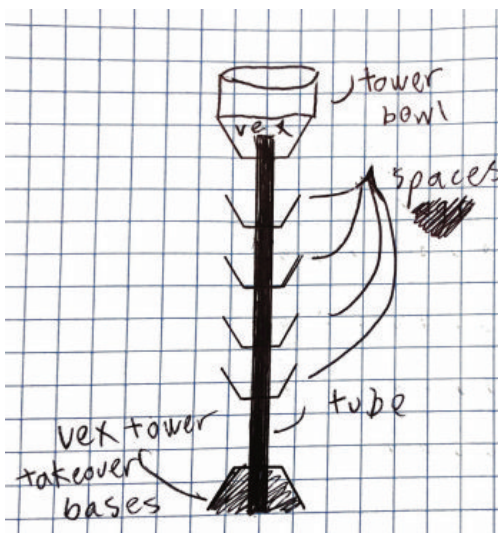
We disassembled cubes, towers, platforms, caps, etc., and came up with many different ideas.

Initial Sketch:

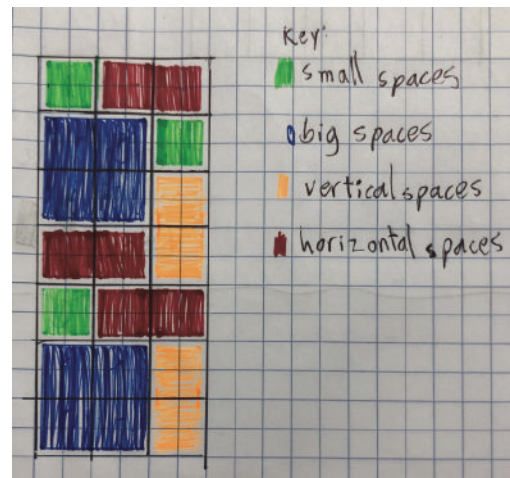
Our parts organizer was designed to be placed on a table, to be portable and with different layouts.



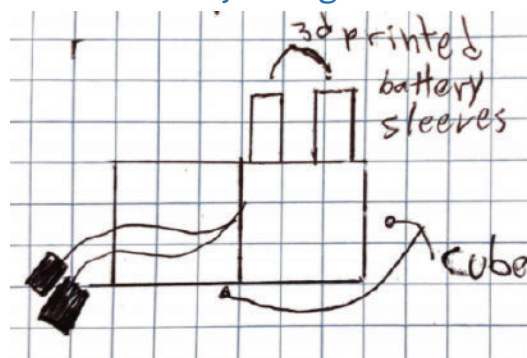
Tower Organizer



Shelf (with different sized spaces)



Battery Charger

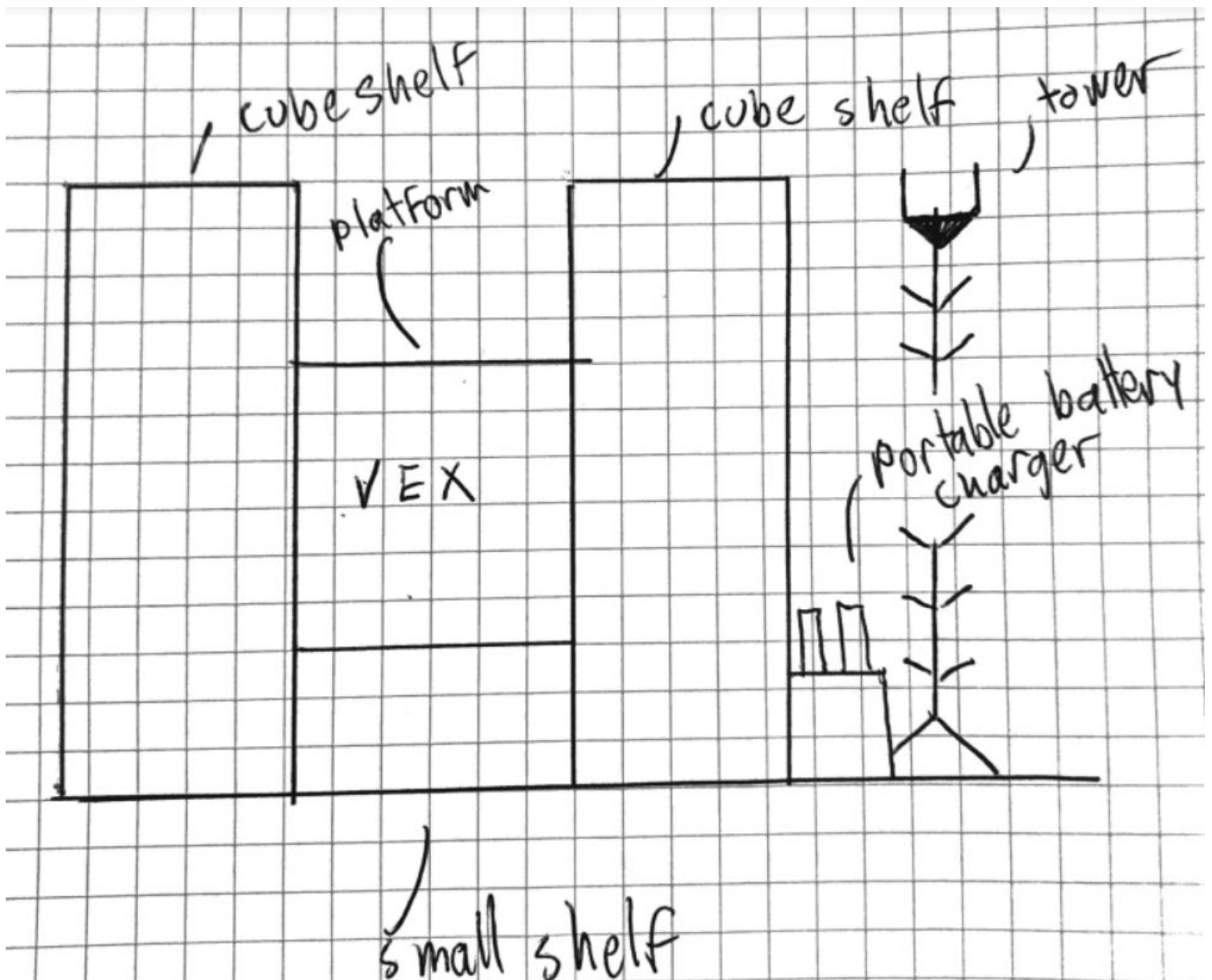


Final Design:

After all the ideas we had, it was time to choose one final idea. We decided to integrate all our ideas into one.

Components:

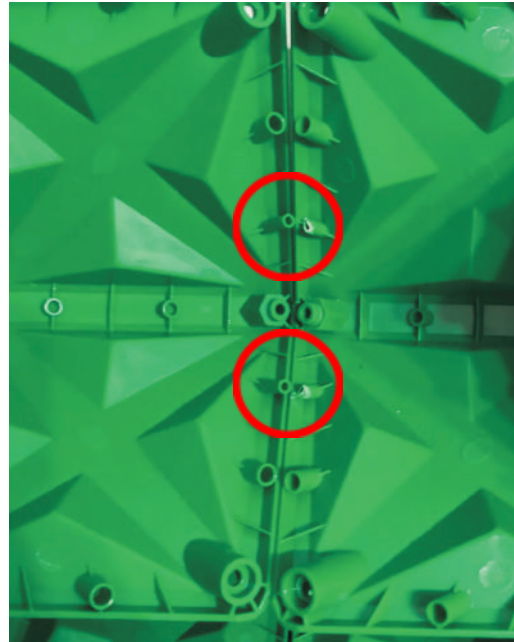
- Vertical shelves = cubes
- Small shelf = cubes
- Metals organizer = platform
- Tower organizer = bowls and bases
- Battery Charger = 3d printed parts and cubes
- Small parts organizer = Cap



Construction

Small Shelf

- Disassemble cubes by removing all the screws. Remove the protruding parts of each half of the cubes with a Dremel.



- Glue two cube halves together



- Glue the 4 assemblies together using flags



- Reinforce the shelf by adding flag pieces to the bottom



- Finish by attaching all the parts together



Vertical Shelf

- Disassemble cubes by removing all the screws. Remove all the protruding parts of each half of the cubes with a Dremel.



- Accommodate the cubes on top of a wood panel.



- Screw the cube halves in place

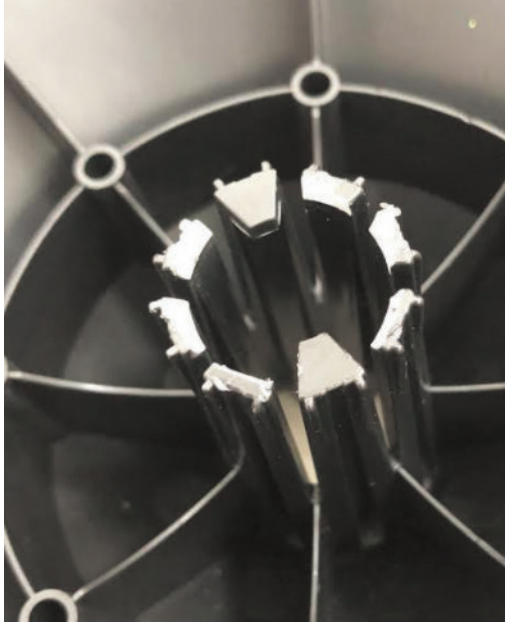


- 3d print shaft holders ([designed by us](#)) on the side to store shafts.



Tower

- Remove clips from 6 tower bases (leave 2 of them)



- Detach tower bowl and slide bases onto the tower



Metals Organizer

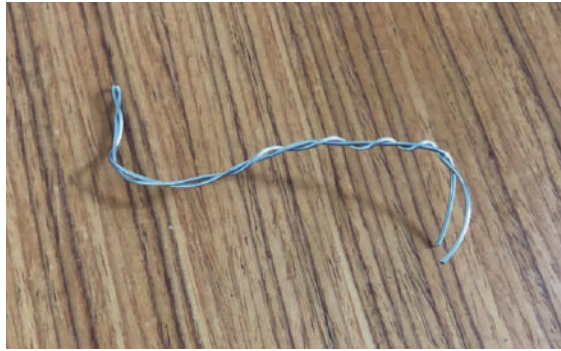
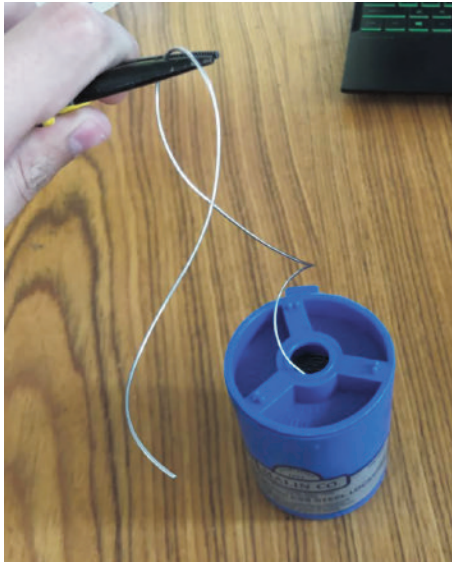
- Glue corner brackets to the platform



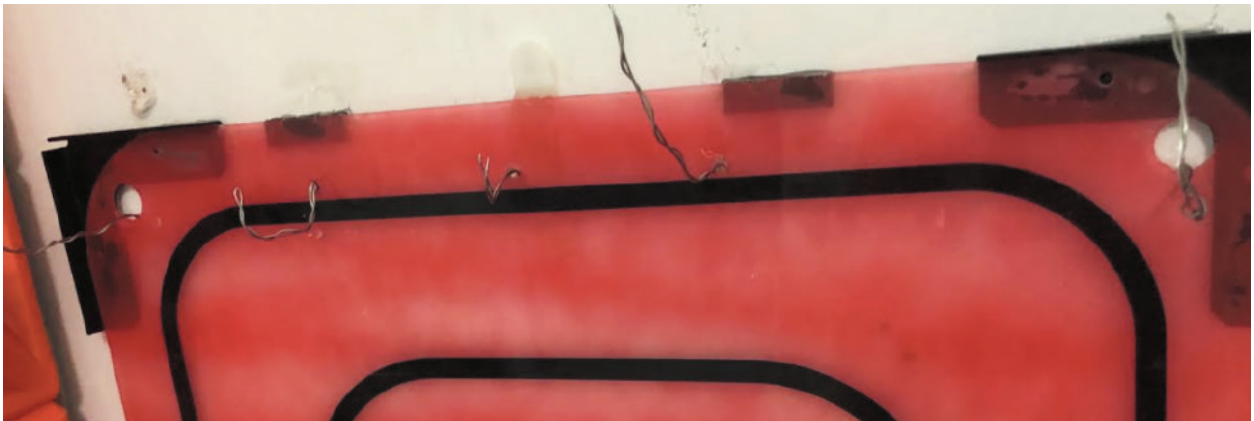
- Secure platform to the wall



- Shape wire into hooks



- Make holes onto the platform and attach hooks



Battery Charger

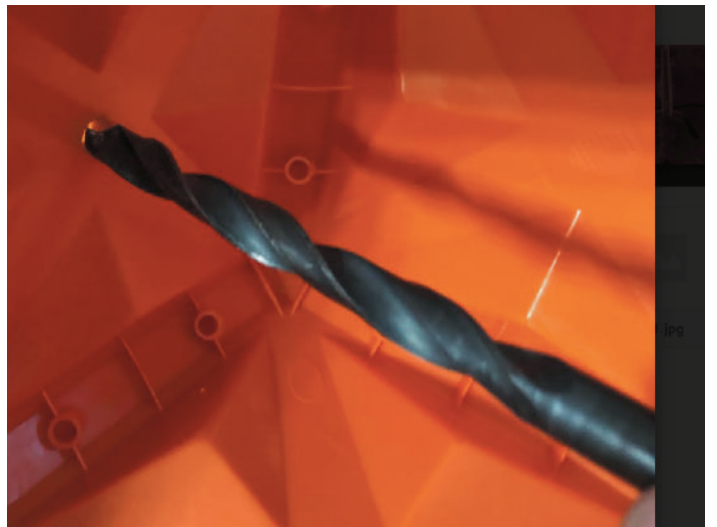
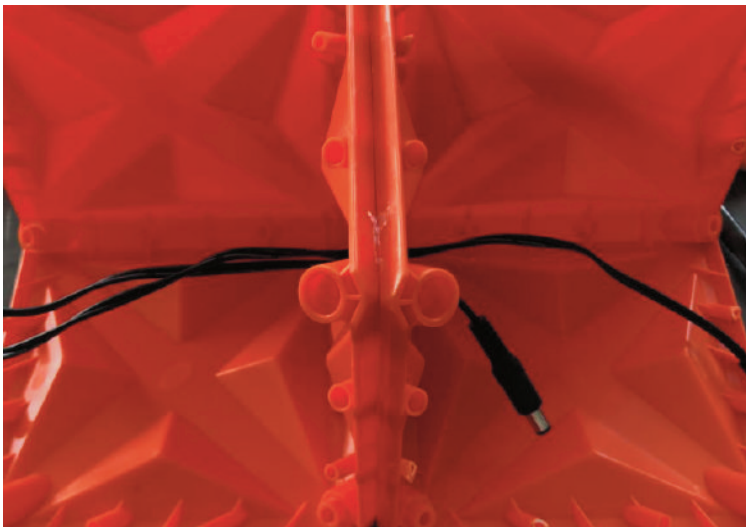
- Glue 2 cubes together with superglue



- Drill holes on top of the cube



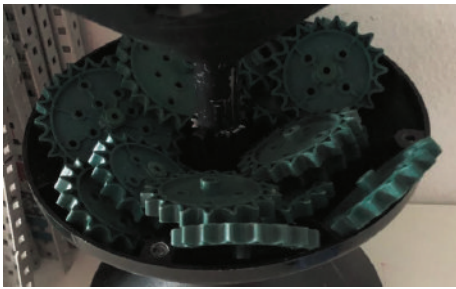
- Drill hole on the side for the cables



- Glue Battery sleeve ([printed](#))



Photos



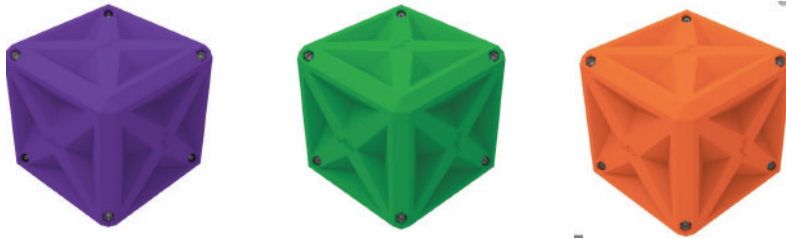
Testing

We placed our vex parts on the new organizer which facilitates the building process, making the parts easy to find and keeping the working area in order.



Materials (Vex Elements)

Tower Takeover Cubes (11 purple, 12 orange, 4 green)



Tower Takeover Tower (tallest)



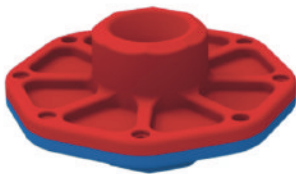
Tower Takeover Bowls (6x), Bases (8x)



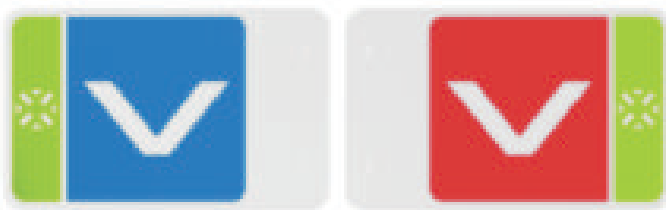
Turning Point Platform (1x)



Turning Point Cap (1x)



Turning Point Flags (8x)



Tower Takeover Brackets (4x)



Other Materials

15" x 38" x ½" wood panels (2x)

#8 ½" screws (42x)

Super Glue

Drill

Dremel

3d Printer

3d Printer Filament