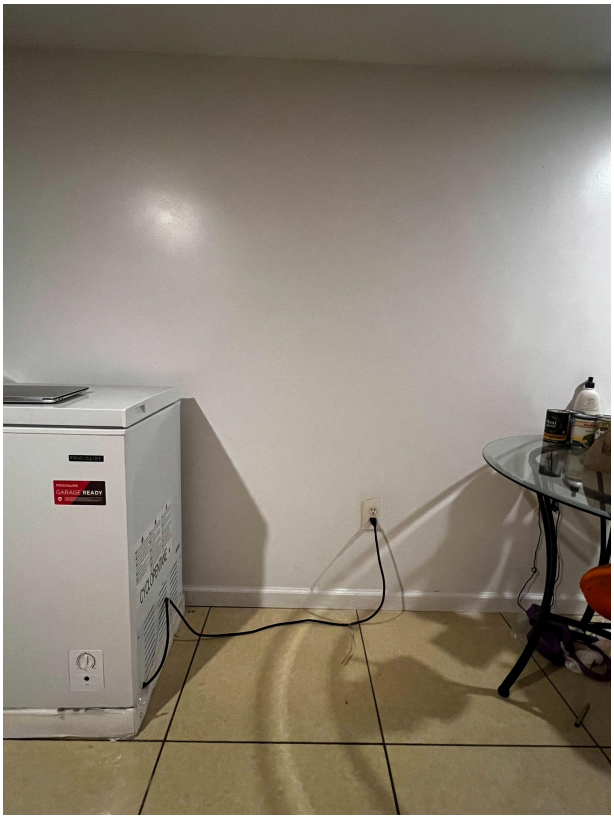
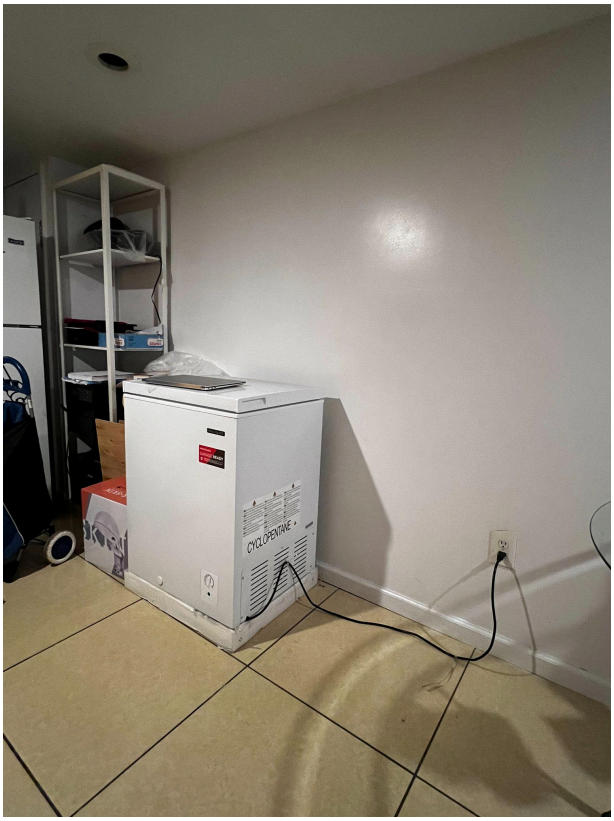
Needs Assessment

Site Address/ Grow Area
A small area on the second level of my house.

Measurements of Grow Area
5' (L) x 4' (W) x 8' (H)





Experience Level in Growing Plants on my Own (soil-based or soil-less farms)

From a practical standpoint, I would rate my experience level in growing plants on my own a 2 out of 5. I myself have soil-based indoor plants at home that are at my responsibility to take care of and maintain. For the most part, it has been going pretty well except for some small instances for specific plant species that I'm unfamiliar with. Therefore, most of my plants are of low-maintenance. Additionally, every summer we grow all sorts of vegetables in my backyard, ranging from tomatoes to squash to pumpkin and which are all soil-based and maintained by my Grandma. Overall, I have exposure to growing plants and crops but never hydroponically or taken on an entire system myself. From this course, I hope to take away some insights in soil-less growing and bring forward new ways of growing food even at my own home.

Grow Area Conditions

(Is there a water access point, sunlight access, walking space, internet access and no hazards in the proposed grow area(s)? (i.e outlets with GCFIs, storage space for materials, potential contaminants that would need to be mitigated, inconsistent WiFi) Check all that are easily accessible/attainable.)

- ☐ 4 - 8 Natural Sunlight Access
- ☐ 8 hrs+ Natural Sunlight Access
- ☑ Convenient Water Access Point
- ☐ No Nearby Electrical Hazards
- ☐ No Nearby Biological Hazards
- ☑ Sufficient walking space to/ from/ and in the proposed growing area
- ☑ Consistent Wifi Access
- ☑ Nearby Power Source (8ft or less)
- ☐ A Power Source (more than 8ft)
- ☑ Nearby Storage Space for Nutrients, Materials, Testing Equipment

Priorities

What are your top 3 priorities for this home hydroponic system?

- ☐ Highest Amount of Yield
- ☐ Lowest Resource Extraction (water, power, inputs)
- ☐ Aesthetics of the System
- ☑ Affordability of the System
- ☐ Exposure to AgTech for Family, Friends, and Community
- ☐ Exposure to Sustainable Farming for Family, Friends, and Community
- ☑ Low Maintenance
- ☐ Hands On Experience Integrating Agriculture and Technology
- ☑ Providing Food Relief to Family, Friends, and Community
- ☐ Caloric Intake/ Nutritional Resource
- ☐ Horticultural Therapy

- [ ] Other:

Water Access Point

The closest water access point is right in front of the system build, so within 5 feet. This is a kitchen sink directly in front of the space, in which tap water is only available. Moreover, I also have access to filtered water upstairs, specifically the Reverse Osmosis (RO) System.

Light Source

Since the grow area is in the middle of the room and on the lower level there's not much access to natural light so artificial LED lighting will need to be put into good use for optimal growth.

Wifi

There is a pretty steady wifi access point with a download mbps of 549.56 and an upload mbps of 22.32.

Hazards

- [ ] Electrical Hazard (nearby outlet or power source)
- [ ] Chemical Hazard (nearby chemicals or biohazards)
- [ ] Air pollutants
- [x] Pests present (insects, rodents, etc.)
- [ ] Exposure (if outdoor, consider potential hazards due to external conditions)
- [ ] Other:

There have been some instances of little insect critters and recently there have been some mice rodents when the weather turns cold. We have set up some traps for the mice and for the critters as well. That has been working pretty well.

Limitations

- [x] The growing area has fluctuations in temperatures that I can't control
- [ ] The growing area has potential air pollutants
- [ ] The growing area has chemical hazards nearby.

- ☐ The growing area is not secure.
- ☐ I do not know how to design, assemble or maintain the farm I want.
- ☐ I do not have Data Collection/ Analysis tools to maintain the farm's health.
- ☐ I do not have 24/7 access to this growing space.
- ☑ I cannot dedicate more than 1-2 hours/ week to maintain the system
- ☑ Other: Sometime in the foreseeable future I can definitely see this come to life at home. But right now, I need some stability career-wise etc. in order to have time to maintain this hydroponic system well. But this program has been a great resource and has helped piqued an interest in me in taking on growing crops at home along with my Grandma. I am not able to introduce these hydroponic systems to her.

Ideal Vision

Ideally, I would like this system to provide for about a family size of 3 - 4 people per growth cycle. I'd like my system to be simple enough for a majority of a population to replicate as their own and grow crops that match their palate and serve a nutritional purpose. Therefore, something that is cost-effective, space efficient, and provides nutritional value is my ideal vision for this case study.