



Ilima Intermediate School & Your New Project!

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A Little About Me

- ❑ Mechanical engineering student at the University of Hawaii at Manoa, College of Engineering.
- ❑ Society of Women Engineers (SWE) UHM Collegiate Section President.
- ❑ Working on the research and development of a Mars rover; Arm Subsystem lead.

Fun Facts

- ❑ I love travelling and want to live in Japan someday.
- ❑ I ride a motorcycle.

Let's get excited about your design project!

- ❑ Projects using the **Engineering Design Process** help you create **innovative solutions** for any challenge! It encourages you to learn from your failures.
- ❑ **Customer:** Working and creating a product for your customer will challenge you but it will be awesome because you will know if you succeeded by how satisfied they are!
- ❑ **Team:** Working together with your teammates will result in amazing ideas and satisfying outcomes.
- ❑ **Research and Planning:** Careful research and planning will result in opportunities to adjust, complete and deliver your product to your customer.





Some tips . . .

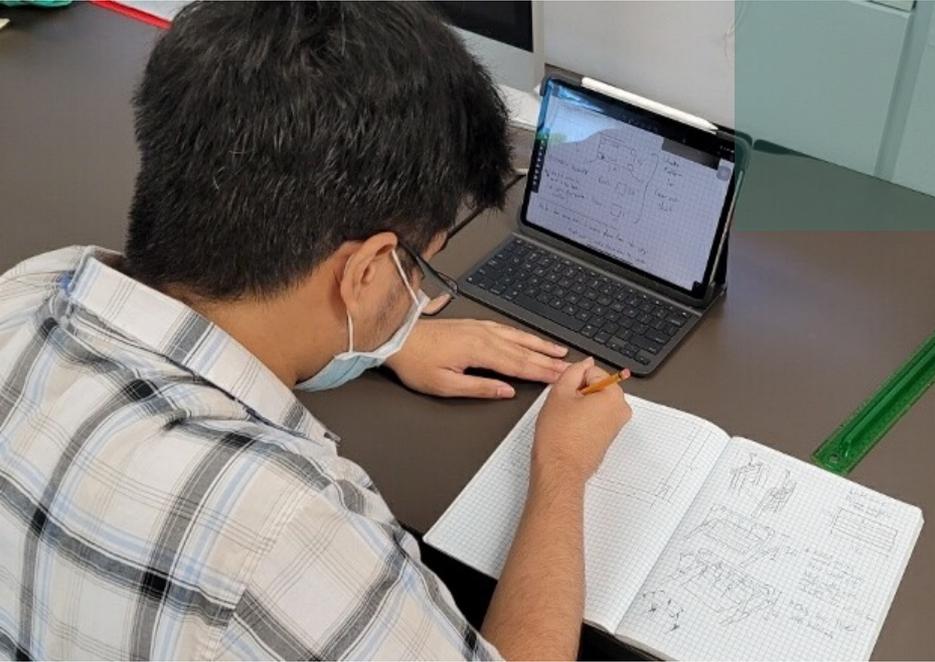
Understand your customer requirements

- ❑ **Customer:** is the person who wants the design and project.
- ❑ **User:** is the people who will use it (could also be the customer).
- ❑ **Designer/Engineer:** must design and fabricate something that satisfies the customer AND user.

More tips . . .

Take detailed notes and sketches.

- Create a **notebook**
- Remember to include date and sources
- Create detailed sketches so your teammates can replicate



Questions to keep in mind when meeting the customer.

- Constraints:** What does the design need to accomplish?
- Goals:** What are the non-essential aspects of the final product?
- Concerns:** What problems does the customer foresee? Find a solution?
- Timeline and Schedule:** When would the client like the various parts of the project completed, including initial design, prototyping, testing, and final delivery?
- Budget:** How much is client the willing to pay for the project?

What's Next?

Research

The science: What do you know about plant requirements? Hydroponics?

The design: Are all the constraints and goals the client requested possible?

The materials & supplies: What materials and supplies do you need?

Brainstorm with Your Team

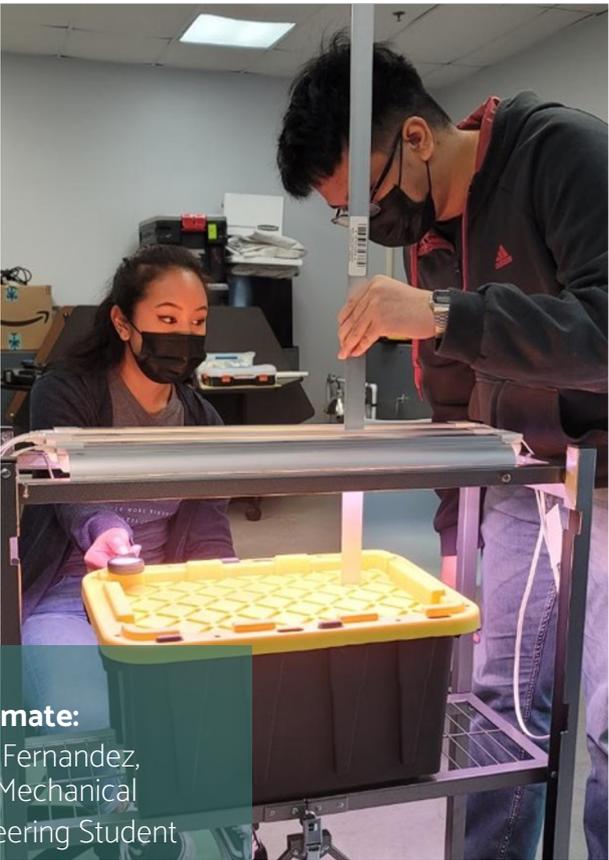
- Focus your ideas on the topic at hand.
- Wild ideas lead to innovative designs.
- Combine and improve ideas

Research Continued

Is the design you selected feasible? **What have others done?**

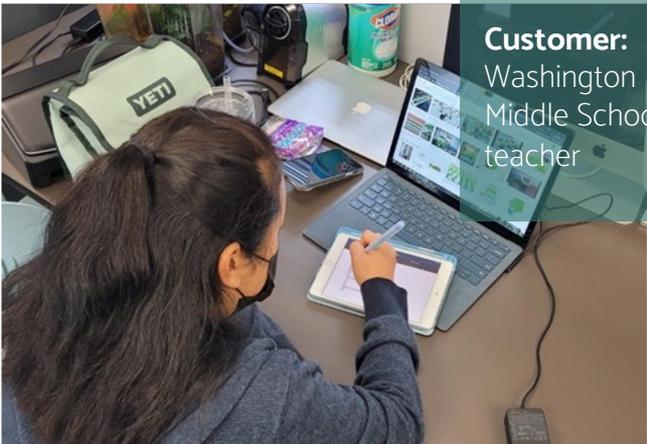


Example: Our Portable Hydroponics Experiment Station



Teammate:
Alden Fernandez,
UHM Mechanical
Engineering Student

Customer:
Washington
Middle School
teacher



Let's go live to our portable hydroponics experimental station:

The system is designed for students to conduct hydroponics experiments. Plants can grow in an indoor environment.



**THANKS
&
GOOD LUCK!**

Does anyone have any questions?

CREDITS

- Presentation template by [Slidesgo](#)
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