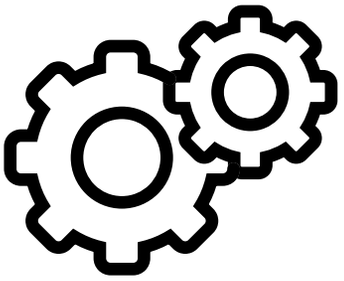
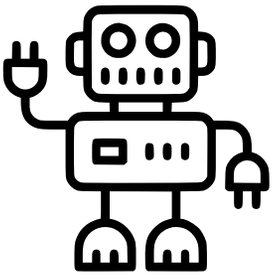
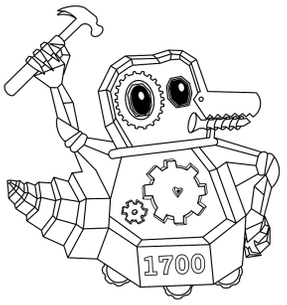


Gear up!



_____'s design journal!

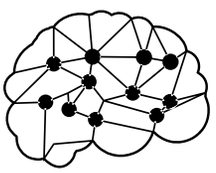
DESIGNING FOR A PURPOSE

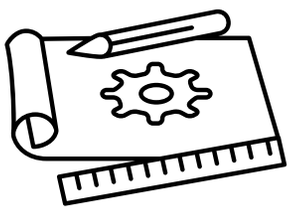


The Game Plan

Step 1: Understand

Step 2: Brainstorm

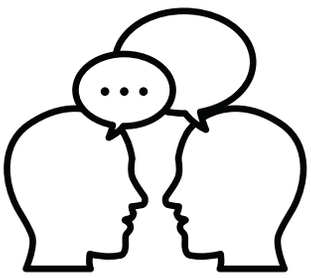




Step 3: Prototype

Step 3: Feedback

Step 5: Share



Gear up!

Additional Notes

Use the extra space if you need it for more notes or sketches:

This journal was produced by Gatorbotics Robotics Team at Castilleja School

GATORBOTICS

Telling your story

Answer the following questions, and use them as notes during your presentation!

First, introduce yourself, your interviewee, and their challenge:

Say, "Hi, my name is _____ and I interviewed _____. The challenge I tried to help them solve was _____."

Next, explain your robot. Explain how your robot works to solve the challenge:

_____

_____

Now, explain how you used your light. Where is it and what does it do?

_____

_____

Finally, what is one thing you would do differently in the final, real robot? What could work better?

_____

_____

_____

Ask if anyone has any questions about your robot! After you answer the questions, say thank you!

Step 1: Understand 

- When designing new robots, we want to ensure that they will be useful. We need to know what the people around us need a robot to do.
- One way to understand your community's needs is to ask questions in an interview!
- What are some questions you could ask to understand what they need a robot to do?

1. Ex: *What is your favorite and least favorite part of your day?*

2.

3.

4.

5.

Stuck? Think about their daily life. What's something they do often that frustrates them? Ask follow up questions for more information!

??? Interviewing!

Interview tips:

- Listen attentively and make sure they know you are paying attention
- Ask follow up questions like "why?" to understand the reasons behind their answers
- Thank them for their time at the end of the interview!

Your turn! Turn to the person next to you and ask them a few questions from your list. Take notes on what you observe!

Question 1:

I asked, _____

_____

They said, _____

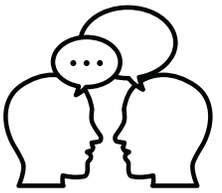
_____

I asked (circle one): Why? Tell me more! What might help?

They said, _____

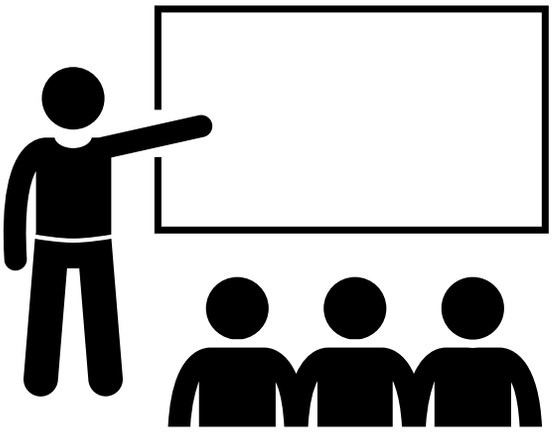
_____

Step 4: Share!



Now that we have spent some time prototyping, it's time to present (tell other people) about our ideas. If we want to help people solve problems with our robots, we need to show them what our robot can do!

Sometimes talking to people can be scary, but it's okay to be nervous. Take a deep breath and remember that all you're doing is showing people how cool your robot is!



Presentation tips:

- Practice practice practice. Practice what you will say when you present! Use the next page to plan it all out
- Speak loudly and slowly! Make sure everyone in the room can easily hear you and understand what you are saying.

Prototype reflections

Nice job with your first prototype! Let's do some reflection to see how we can improve!

What went well with your prototype?

What could've gone better with your prototype?

What changes do you want to make with your design? What could you add to the next version?

Question 2:

I asked, _____

_____

They said, _____

_____

I asked (circle one): Why? Tell me more! What might help?

They said, _____

_____

Question 3:

I asked, _____

_____

They said, _____

_____

I asked (circle one): Why? Tell me more! What might help?

They said, _____

_____

Question 4:

I asked, _____

_____

They said, _____

_____

I asked (circle one): Why? Tell me more! What might help?

They said, _____

_____

Let's Synthesize!

to synthesize is to combine and clarify your thoughts

**the interviewer is the one who asks questions (you!) and the interviewee is the one who answers the questions!*

What is one thing your interviewee loves?

_____

_____

_____

What is one challenge your interviewee faces?

_____

_____

_____

Why is this specific challenge important to them?

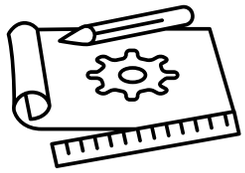
_____

_____

_____

A question to consider: **Empathy** is the ability to understand and share the feelings of another, the foundations of human connection. How can we build empathy with our interviewee?

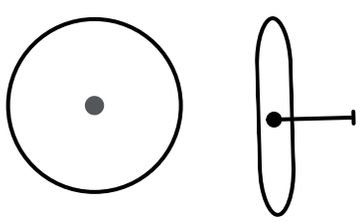
Step 3: Prototype!



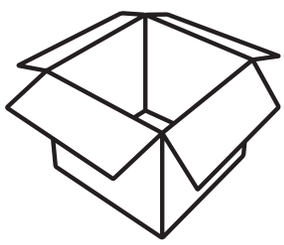
Now it's time to bring your design to life! Before engineers build a full size product, they build a practice product called a prototype. Prototypes are usually smaller and less fancy than real products so engineers can play around with details and make sure they end up building the best version of their design.

It's your turn to prototype!

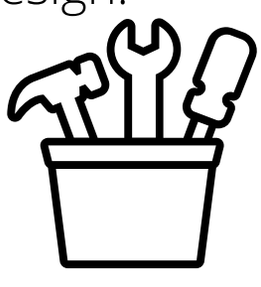
The following chart can help plan your build:

What do you want it to do?	How will it work?	Sketch it quickly
example: drive around	*Wheels!*	

Prototypes can give you an idea of how different parts and pieces work together; if a prototype is really not working out, it may be time to make some changes in your design.



Time to build!



What's your vision?

Let's write a need statement! Need statements can help us focus on who we're designing for and clarify our vision!

_____ (the person who you interviewed)

needs a _____ (the

name of your design) in order to _____

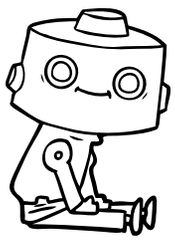
_____

_____ (why do they need this?).

Draw a picture of your person using your device here:

Step 2: Brainstorm

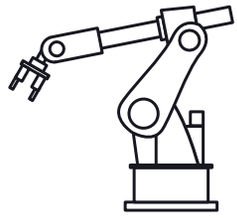
Now that we've got a challenge, it's time to think about solutions! Come up with at least 4 robots to solve your challenge and sketch them below! Don't worry about being perfect, these are just quick drawings!



1)

2)

3)



4)

Label each of your sketches with a name or a short description!

Feedback is fun!

Now that you have some fantastic ideas, it's time to pick a few to move forward with.

Find a friend and explain your 2 **favorite ideas:**

- Listen to their questions and ask for feedback: how would they improve your design?
- Give them feedback on their top 3 as well! Focus on constructive and positive comments.
- It's important to get feedback because we all have different perspectives- your friend may make you think about something in a whole new way!

What are 3 ideas your friend had to improve your ideas?

1. _____
2. _____
3. _____

More time? Find another friend and get more feedback!

_____

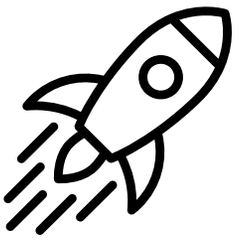
_____

_____

_____

You never have to use feedback, but it's a good idea to listen and consider other's ideas, just in case you missed something!

Design away!



Consider your feedback and **pick one robot** that you think will most effectively solve your challenge. Sketch your idea below, it can be different than the idea you originally came up with! Sometimes you can even mix and match pieces of multiple designs and ideas to make a new design entirely.

Come up with a fun name for your design:

_____