



Element Unknown

Build Season

Date: 9/9/2019

Meeting #: 1

Attendance: Garrett, Kaden, MJ, Mason, Preston

Goals Accomplished:

- We made a list of tasks we wanted the robot to be able to do
- Created a list of mechanisms that we need to work on
- Agreed on the team name "Element Unknown" and its logo
- Came up with ideas on a drive train and picked one

Goals for Next Meeting:

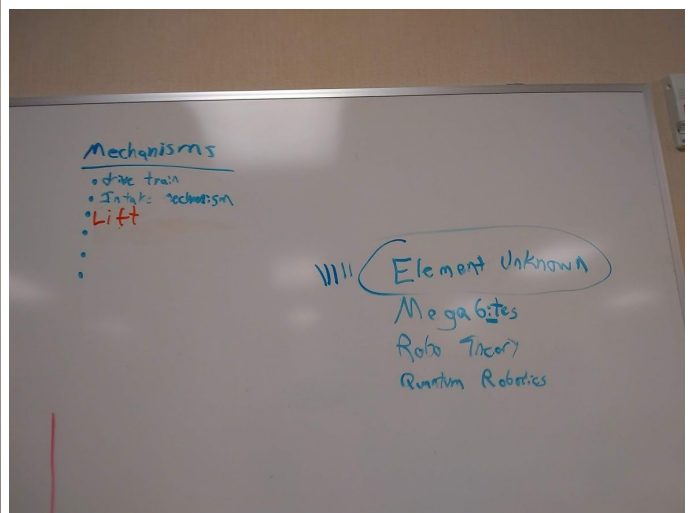
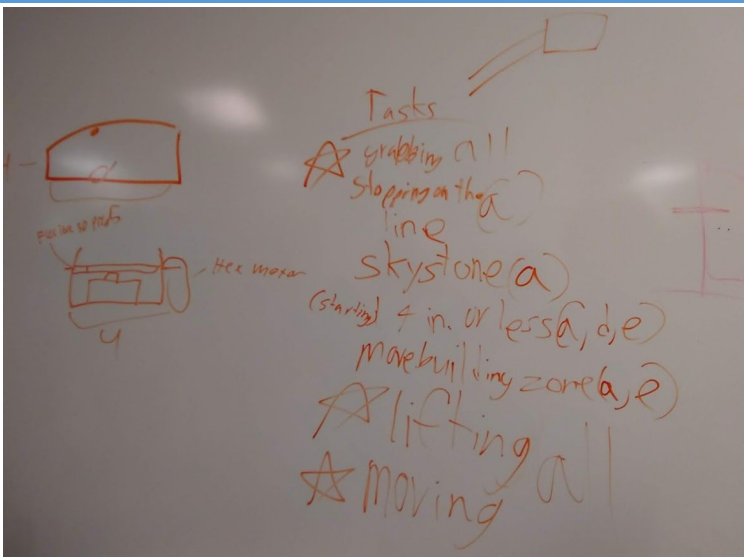
- Build a test robot to play around with and learn from
- Improve and perfect the team logo

Tasks:

- Used the game manual to determine what tasks we wanted to focus on and wrote them down for reference
- Explained our ideas for the intake system and drew how they work to help everyone understand
- Drew our ideas for a drive train and selected one with 6 wheels that we all agreed on

Reflections:

- To help everyone understand how our ideas work and to decide which one will work best
- We expressed our ideas into something more understandable for others, weighed the pros and cons and decided which was best with everyone's input



Date: 9/12/2019

Meeting #: 2

Attendance: Garrett, Kaden, MJ, Mason, Preston

Goals Accomplished:

- We built a prototype chassis with two motors and six wheels
- Deconstructed parts and organized them to build with later

Goals for Next Meeting:

- Attach the battery and power distributor to test out the drivetrain

Tasks:

- Constructed a drivetrain
- Organized parts
- Deconstructed parts
- Discussed designs

Reflections:



Date: 9/16/2019

Meeting #: 3

Attendance: Garrett, Kaden, MJ, Mason, Preston

Goals Accomplished:

- We finished building our prototype drive train
- We listed the point values of all the tasks and prioritized them

Goals for Next Meeting:

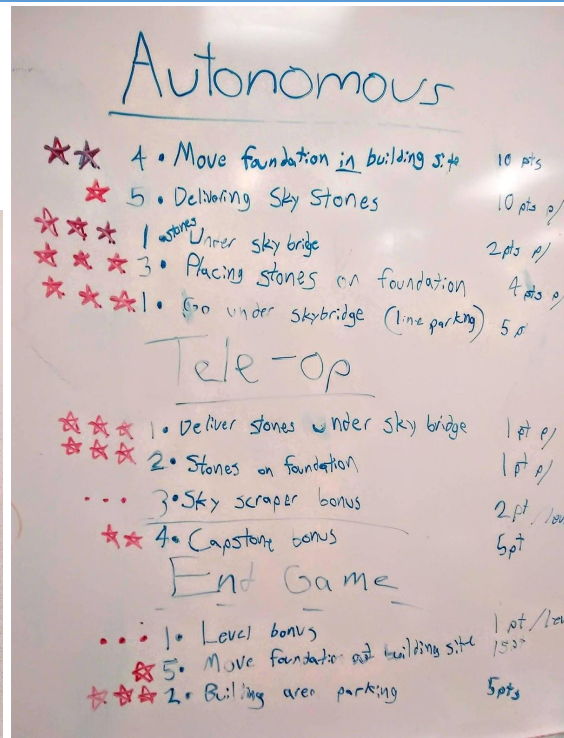
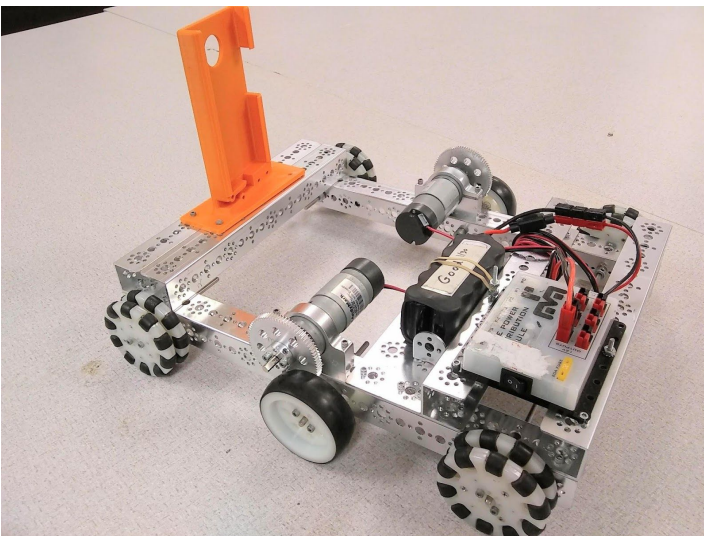
- Start programming the prototype drive train
- Improve and expand on our idea for an intake system to pick up blocks

Tasks:

- Dismantled old chunks of former robots
- Examined the challenge field
- Prioritized the challenge tasks (see photo)
- Finished building drive train prototype
- Attached the power distributors and the battery and hooked them up

Reflections:

- We needed more parts to build with
- Wanted to see what difficulties may affect the robot and prepare for them (ex: bumps to crawl over, weight of items)
- As a team, we decided which missions we wanted our robot to be able to do and kept them in mind when building the test robot





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Date: 9/19/2019

Meeting #: 4

Attendance: Garrett, Kaden, MJ, Mason, Preston

Goals Accomplished:

Goals for Next Meeting:

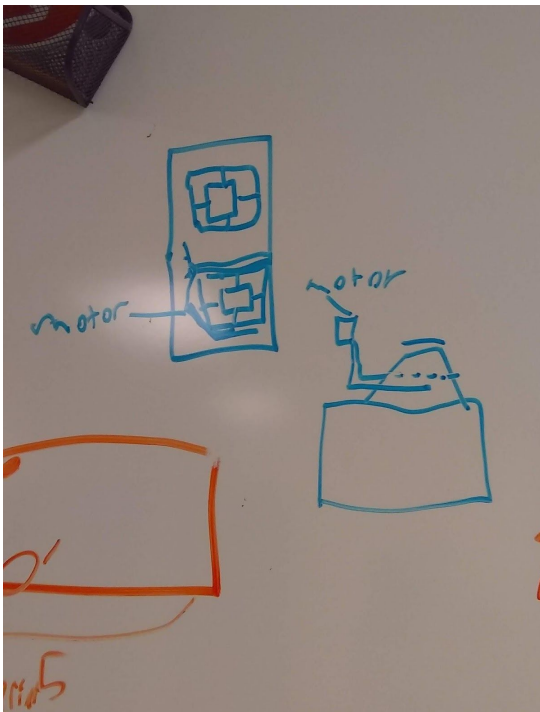
- Garrett designed an intake claw like mechanism as a prototype intake mechanism.

- Finish programming the drive train for the test robot

Tasks:

Reflections:

Team members chose job roles on the team



	Primary Role	Secondary Role	Tertiary Role	Quadrory Role
Kaden	Builder/Designer	Eng. Notebook	Outreach	CAD/3D Printer
MJ	Builder/Designer	CAD/3D Print	Outreach	
Preston	Builder/Designer	Sponsorship	Eng. Notebook	
Garret	Coder	Outreach	CAD/3D Print	Eng. Notebook
Mason	Coder	Sponsorship	CAD	Website

Date: 9/23/2019

Meeting #: 5

Attendance: Garrett, Kaden, MJ, Mason, Preston

Goals Accomplished:

- Built a block clamp (intake) prototype
- Started the height extension mechanism to raise the block intake

Goals for Next Meeting:

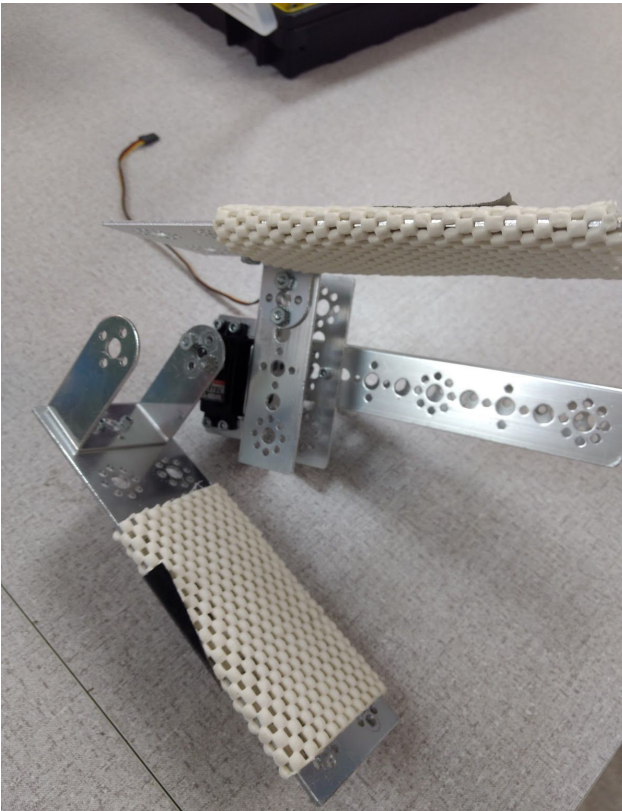
- Built an intake prototype
- Decided on T-shirt color

Tasks:

- Downloaded the current software for the robot phones

Reflections:

- We revised different intake designs and are picking up on really good ones



Date: 9/30/2019

Meeting #: 7

Attendance: Garrett, Kaden, MJ, Mason, Preston

Goals Accomplished:

- Started building robot chassis for robot
- Decided on a 4 motor, 6 wheeled drive train
- Got the practice robot up and running
- Decided on a T-shirt color

Goals for Next Meeting:

- Program the lagging wheel to keep up with the others to straighten the drive path for test robot
- Finish the robot chassis and work on implementing the drive train
- Find flaws in the test robot to improve the final robot

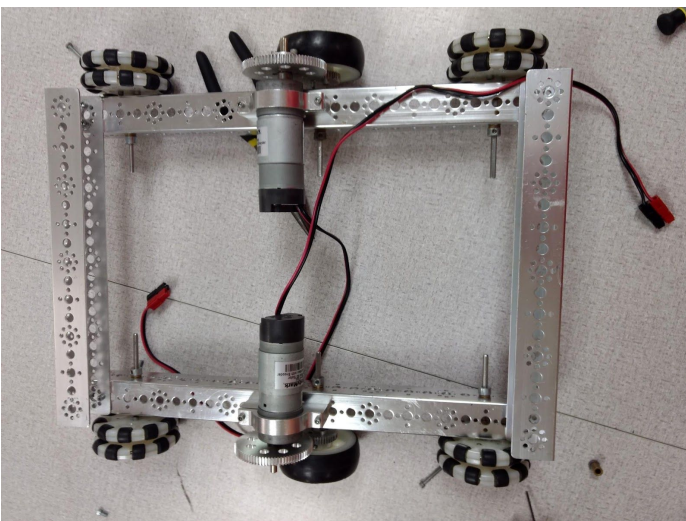
Tasks:

- Shared our drivetrain ideas and the pros/cons to each one
- Decided on a 6 wheel drive, 4 motored, chained movement mechanism
- On the test robot, we replaced the 4 omni wheels with Tetrix wheels
- Finished a rough draft the code
- We drove the robot and it had a major drift
- Decided to have red team shirts

Reflections:

- We wanted to choose the most beneficial way and all agree on one
- With this, the robot will have more power traction and a 0° turn radius without acquiring extra motors
- All of the wheels will be the same height so the powered wheels can touch the ground
- We can now begin learning with the practice robot!
- It must have had some motors lagging behind the others
- Get a feel for robot driving
- We want to stand out and be able to find each other easily

Description:



Date: 10/3/2019

Meeting #: 8

Attendance: Garrett, Kaden, MJ, Mason, Preston

Goals Accomplished:

- Finished building the chassis
- Started creating the drive train (mounting the wheels and motors)
- Began developing a reliable intake

Goals for Next Meeting:

- Finish the drive train
- Make progress on the rack and pinion intake

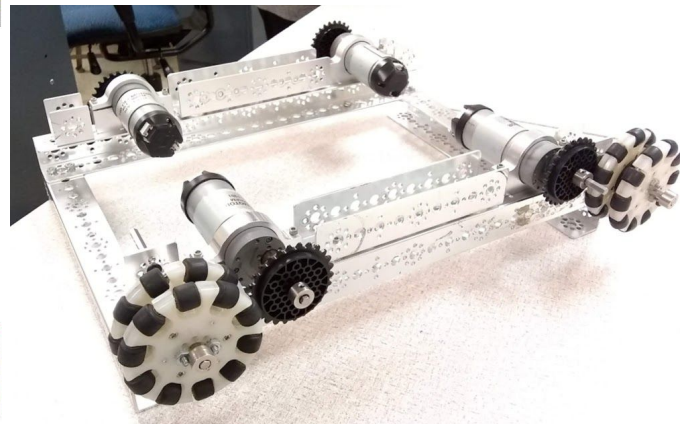
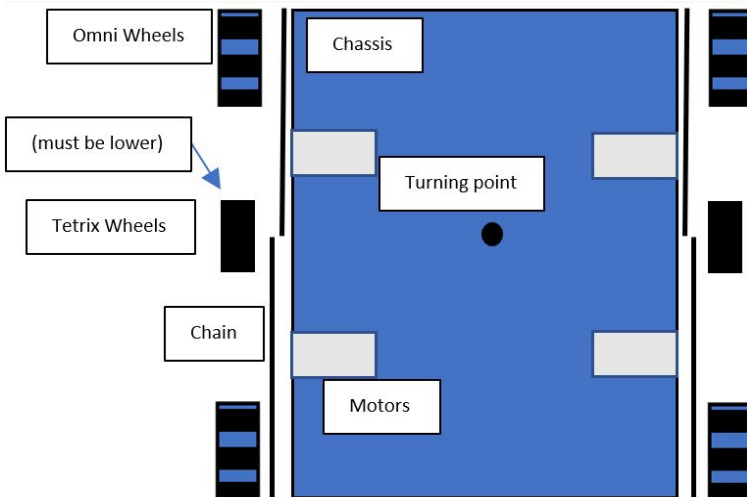
Tasks:

- Finished putting together the chassis for the real robot
- Problem solved how to mount the wheels at the right height
- Lowered the middle wheel mount

Reflections:

- To have a starting point and build off of for the robot
- The middle wheels should be about 4 mm down from the others so it will act as a pivot point. (see diagram)
- This will make the Tetrix wheels dig in to the foam and act as a pivot point

Description:



Date: 10/10/2019

Meeting #: 10

Attendance: Garrett, Kaden, MJ, Mason, Preston

Goals Accomplished:

- Finished building the drive train for our competition robot
- Began building the intake mechanism
- Attached power distributors

Goals for Next Meeting:

- Mount the raising mechanism to the chassis
- Make progress on the intake system
- Wire and hook up electrical system

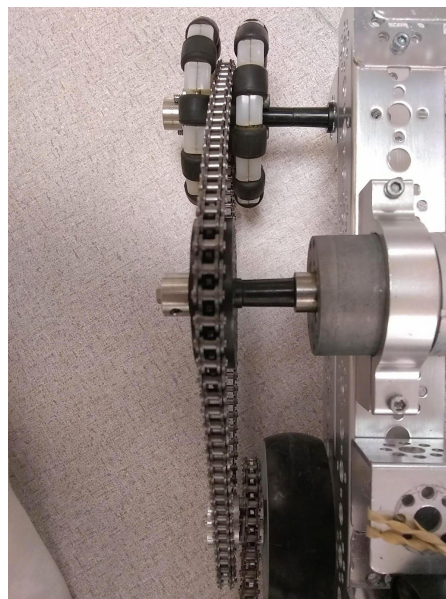
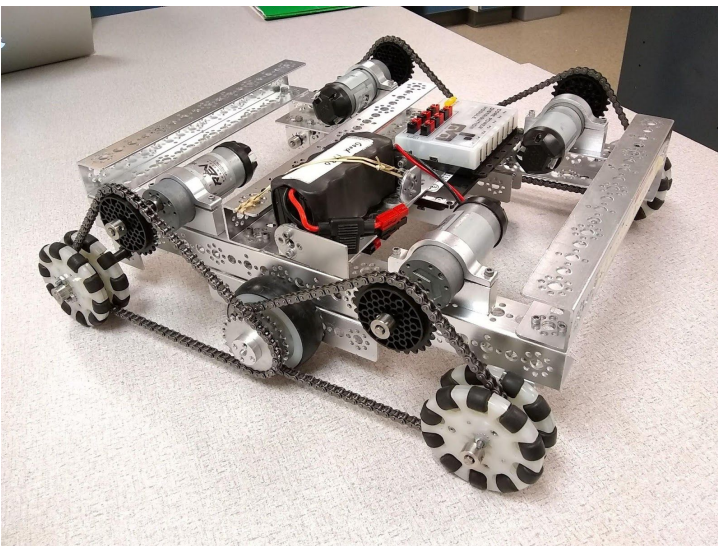
Tasks:

- Moved motors from under the chassis to on top of the chassis
- Mounted Tetrax wheels in the middle of the robot
- Attached the motor controllers underneath the chassis
- Ran into a roadblock when building the intake system
- Made a easy on/off battery holder

Reflections:

- The sprockets attached to the motors were touching the ground, and raising them above the wheels creates more surface area for the driving chains
- Because they are grippy and slightly lower than the other wheels, they act as a pivot point for quick turning
- Since our chassis is so tall, there is a cavity beneath the top, so we put the controllers down there to save space
- We ran out of washers needed to keep the rack securely in place

Description:



Date: 10/24/2019

Meeting #: 13

Attendance: Garrett, Kaden, MJ, Mason, Preston

Goals Accomplished:

- Progressing on the build of the intake mechanism
- Finished attaching drawer extensions
- Resolved software issues with the phone
- Began attaching hex motor to the robot
- Attached 3D printed string spools to a REV axle
- Rechained rear motors

Goals for Next Meeting:

- Finish up building the rack and pinion intake mechanism
- Attach the hex motor firmly to the inside of the robot

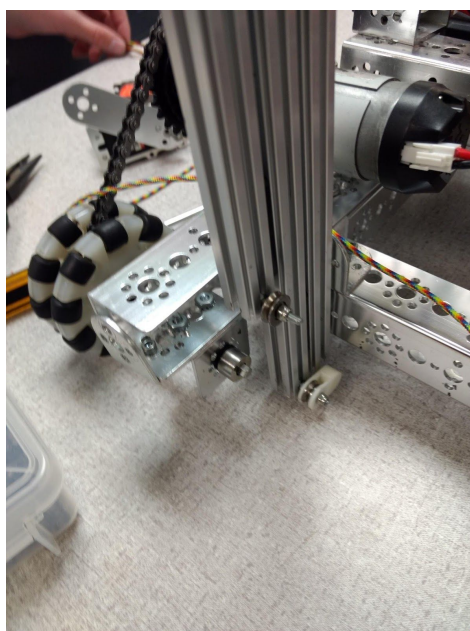
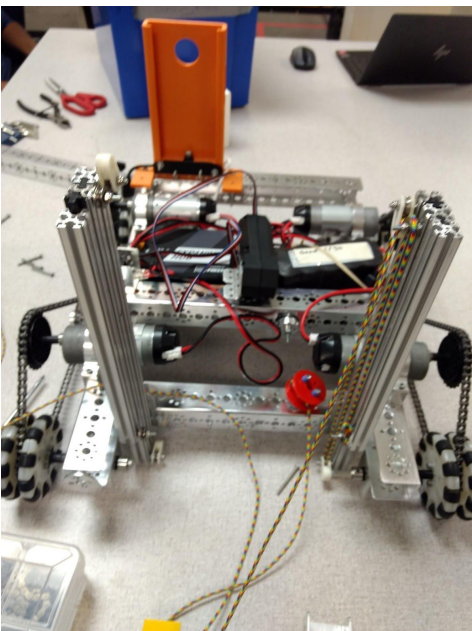
Tasks:

- Tightened up the chains in the back of the robot
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Reflections:

- After a week, we noticed that the chains powering the rear (and middle) wheels stretched, so we took off 1 link
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Description:





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Build Season

Date: 10/28/2019

Meeting #: 14

Attendance: Garrett, Kaden, MJ, Mason

Goals Accomplished:

- Noticed that when we put on the intake, our robot will exceed the size limits
- Took off sections of our robot and moved them back and/or up to be space efficient

Goals for Next Meeting:

- Finish putting our robot back together
- Make progress on the intake (if we have time)

Tasks:

- Took off a piece from the chassis and moved it back
- Striped the electronics

Reflections:

- Now we can mount the drawer extensions and the intake and still be within the size requirements
- We later mounted them vertically to save space

Description:

Date: 10/31/2019

Meeting #: 15

Attendance: Garrett, Kaden, MJ

Goals Accomplished:

- Hooked up the motors, battery, and power switch to the REV Hub Module
- Rebuilt the interior frame

Goals for Next Meeting:

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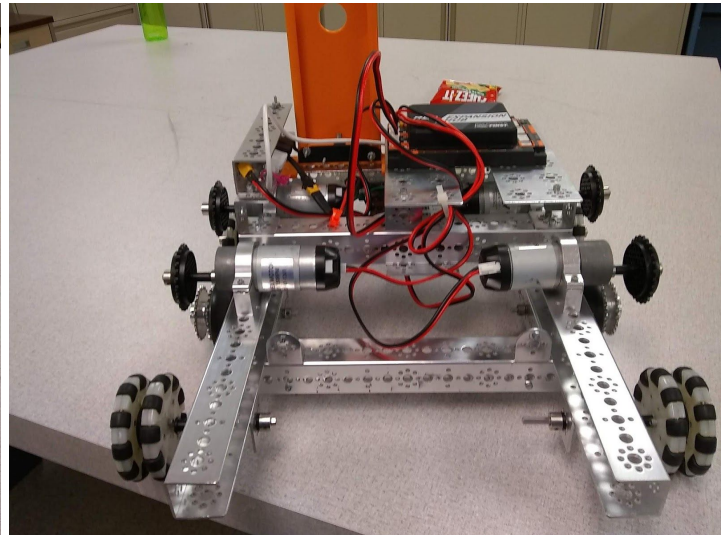
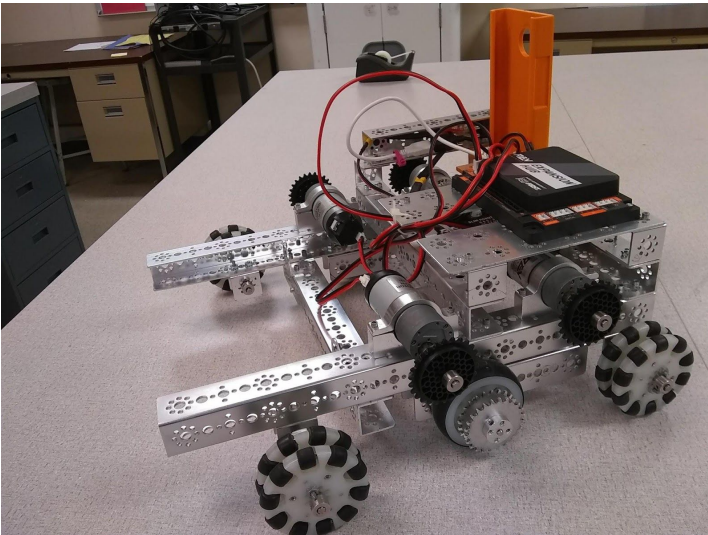
Tasks:

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Reflections:

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Description:



Date: 11/1/2019

Meeting #: 16

Attendance: Garrett, Kaden, Mason, MJ

Goals Accomplished:

Goals for Next Meeting:

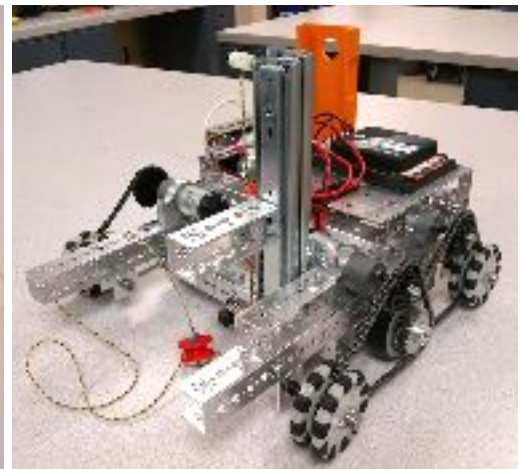
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Tasks:

Reflections:

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Description:





Element Unknown

Build Season

Date: 11/8/2019

Meeting #: 17

Attendance: Garrett, Kaden, Mason, MJ, Preston

Goals Accomplished:

Goals for Next Meeting:

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Tasks:

Reflections:

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Description: