Engineering Notebook

0000

Team Number

PEGASUS

Team Name

Vedruna Vall

School

12/09/2024	00/00/0000	1 of 1
Start Date	End Date	Book #

V3.0 Date 6.10.24

VEX ROBOTICS

REC FOUNDATION

Table of Contents

ROLES

Captain Martí Quera: Martí Quera is the team captain, responsible for leading and coordinating the team, ensuring that all members are working towards the common goal of success in the competition. He plays a crucial role in maintaining team morale and organization.

Sub Captain Marc Ruiz: Marc Ruiz is the sub captain, assisting the captain in managing the team and stepping in to lead when necessary.

Mechanics Ramiro De La Hoz Pineda and Álvaro Expósito: Ramiro De La Hoz Pineda and Álvaro Expósito were the mechanics during the 2023-2024 season of the First Tech Challenge. They were responsible for the construction and maintenance of the robot, ensuring it was in optimal condition for competition. The First Tech Challenge is a robotics competition for students from grades 7 to 12, where teams design, build, and program robots to compete in an alliance format against other teams.

Programmers Marc Ruiz and Martí Quera: Marc Ruiz and Martí Quera are the programmers, tasked with writing and testing the code that controls the robot. Their work ensures that the robot can perform the required tasks during the competition. They first started programming with C++, then switched to Java and now they are back learning and using C++. Same as the mechanics they were the programmers during the 2023-2024 season of the First Tech Challenge.

RR.PP Julen Bosch and Marc Quiñones: Julen Bosch and Marc Quiñones are responsible for public relations, managing the team's communications and outreach. They search for sponsors and ensure that the team's achievements and activities are well-publicized and that the team maintains a positive public image.

Pilots Marc Bigorra and Ariel Miranda: Marc Bigorra and Ariel Miranda are the pilots, responsible for operating the robot during competitions. Their main task is to control the robot, they are crucial for the team's performance in the matches.

GROUPS

Recollidor:

- **Programmer:** Marc Ruiz
- **Pilot:** Ariel Miranda
- **Designer:** Marta Heredia
- **RR.PP:**Marc Quiñones
- **Mechanics:** Ramiro De La Hoz Pineda

2nd GROUP:

- **Programmer:** Martí Quera
- **Pilot:** Marc Bigorra
- **Designer:** Gabriel Luque
- **RR.PP:** Julen Bosch
- **Mechanics:** Alvaro Expósito

Part 1: Comprendre

Introduction

VEX U is a university robotics competition program that uses the VEX V5 system for students. These systems are found in most university classes, but at the same time, they also have advanced technologies such as 3D printing. Therefore, university teams are able to create even more thought-out robots using these tools under certain rules. Throughout the season, students will participate in regional competitions that will take place at the VEX 2024 World Robotics Championship. Competitions help students to show up for other companies. In addition, VEX U uses additional electronic components and parts that are manufactured by the equipment itself. Therefore, there is the possibility of designing the robot in a more open way. The rules of the competition are almost the same as those used in the VEX V5 Robotics Competition, with some modifications.

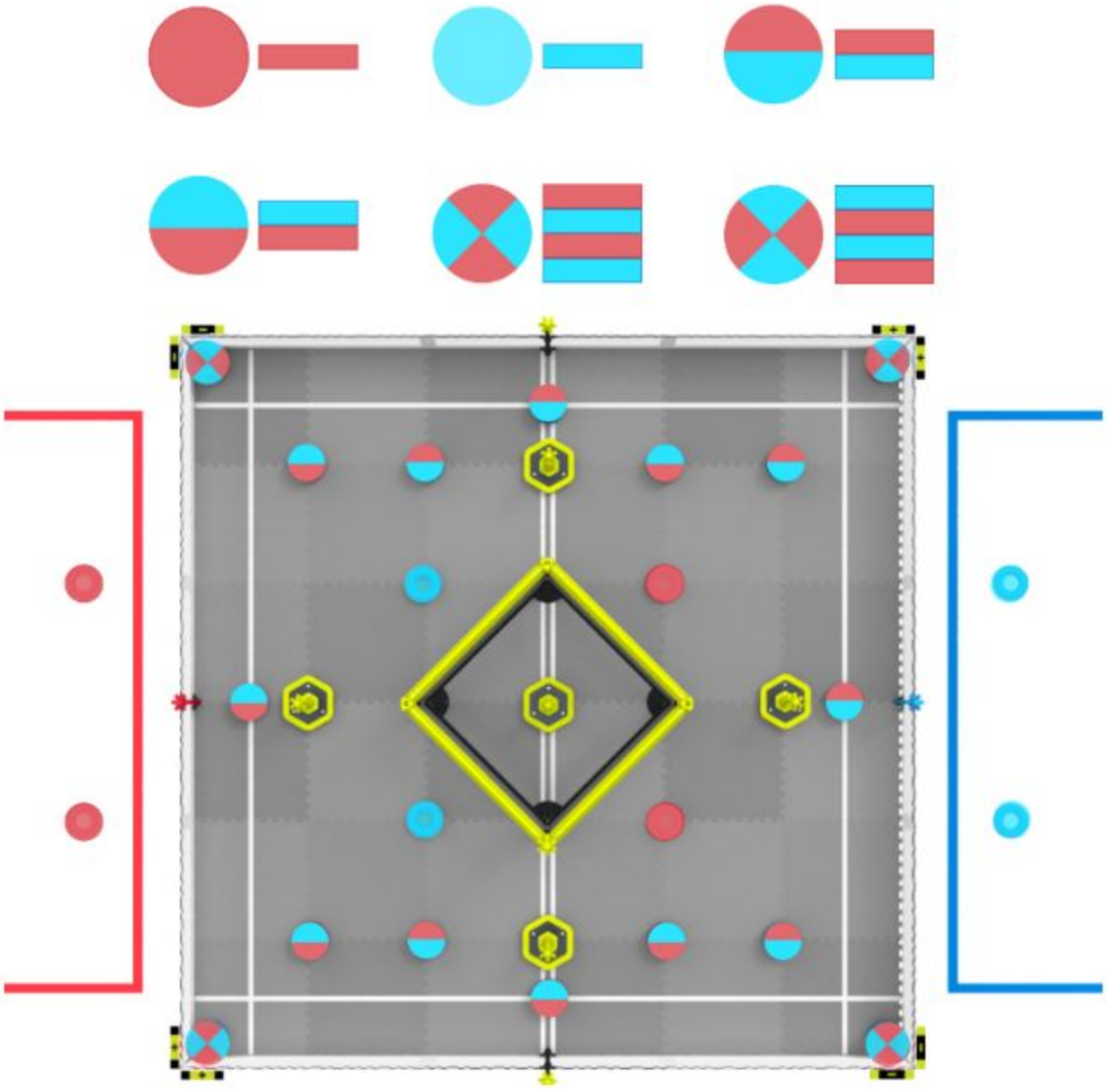
VEX U Definitions

Additional Electronics - Any sensor, processor or other electronic component used in the construction of the robot, and connected to the V5 Robot Brain.

Manufactured Part - Any component used in the construction of robots that is manufactured by team members.

Raw Stock - Materials purchased from third-party suppliers that can be used to create Manufactured Parts.

The image on the next page is a top view of the field. (Red/Blue).



Modificacions de regles: joc

<VUG1>: The intentions behind the rules <SG2> and <SG3>are applied, with the following clarifications:

a. The 24” robot cannot expand horizontally outside 24” x 24”.

b. The 15" robot cannot exceed the total size of 24" x 15".

c. The intention of rule <SG3> applies to both robots. None of the robots can contact three levels, or two non-sequential levels, of the ladder at any time.

<VUG2>: All rules and points values belonging to the climb are applied as written, with the following modifications:

a. Robots are not required to have contact with the ladder at the end of the match to receive points. Robots without contact with the ladder or foam tiles must be contacting another robot of their equipment that meets all the criteria of <SC7>.

b. If a robot meets all climbing requirements, but is not touching the ladder at the end of the match, the climbing points will be doubled.

1. For example, when both Robots reach a standard level 2, the team will receive 12 points (6 for Robot). If, on the other hand, both Robots have reached level 2 and one of them is not Contacting the ladder, the team must receive 18 points in total (6 + 12).

c. A robot that is in the process of climbing without contacting the ladder must be considered more “offensive” or “safe”.

<VUG3>: Rule <SC2> is applied as written, except for clause A. Inclining points and canton modifiers are included in Autonomous Bonus calculations.

Rule changes: Robot

<VUR1>: Teams can use two robots in each game.

a. Both robots can only be built from the following materials:
   1. Official VEX Robotics products (see <VUR2>)
   2. Pieces made by the team (see <VUR3> at <VUR7>).
   3. Wharves, fixations and bearings available in the trade (see <VUR8>, <VUR9>, and <VUR14>).
   4. A legal electronic system (see <VUR10> and <VUR11>)..
   5. Any additional legal electronics (see <VUR12>).
   6. A legal pneumatic system (see <VUR13>).

b. A robot must be smaller than 24” x 24” at the start of the game.

c. A Robot must be smaller than 15” x 15” x 15” at the start of the game

<VUR2>: Equipment can use any official VEX Robotics product, except for the exceptions listed in the table below.

SKU	Description
217-8080	Talon SRX
217-9191	Victor SPX
217-9090	Victor SP
217-4243	Pneumatic Control Module
217-4244	Power Distribution Panel
217-4245	Voltage Regulator Module

SKU	Description
217-4347	775pro
217-2000	CIM Motor
217-3371	Mini CIM Motor
217-3351	BAG Motor
217-6515	Falcon 500

<VUR3>: The pieces manufactured can be created as follows

a. Additive manufacturing processes, such as 3D printing.

b. Subtractive manufacturing processes, such as cutting, drilling, routing or machining.

c. Pendant, such as sheet braking or thermoformation.

d. Attach materials to each other, such as welding or chemically bonding (e.g. epoxy)..

e. Molding de no metalls, com injectar poliuretà en un motlle imprès en 3D.

<VUR4>: The pieces made must be made from Raw Stock. To be considered Raw Stock the material has been purchased in one of the following ways before being subjected to the manufacturing processes indicated here:

	Type	Shape / Profile	Examples
1	Sheet	Flat Plane	• Sheet metal • ⅛" polycarbonate sheet • Plywood
2	Solid Billet	"Thick" rectangular beam / block	• 4" x 4" x 6" solid aluminum billet • 2" x 2" x 2" acetal block
3	Solid Bar	"Thin" rectangular beam	• 2x4 wood planks • ¼" x 3" aluminum bars
4	Hollow Bar	Hollow rectangular beam	• 1" x 1", 1/32" wall aluminum box tube
5	Solid Rod	Cylinder	• ¼" steel rod • ¼" acetal rod
6	Hollow Rod / Tube	Hollow Cylinder	• Copper tubing • PVC pipe
7	Angle	90° "L" shape	• 1" x 1", 1/16" thickness aluminum angle
8	U- / C-Channel	"U" or "C". See this Q&A.	• 1/4" High x 1" Wide Aluminum U-Channel
9	Non-Metal 3D Printer Filament	Thin cylinder	• PLA or TPU filament • Composite nylon filament (e.g. Markforged OnyxTM)
10	Synthetic Polymer used for Molding	Liquid	• Polyurethane • Silicone

Note: The equipment is not required to define the material of all the components of the robot but the unusual parts will have to be defined and explained in detail.

<VUR5>: The following are not allowed:

	Type	Examples
1	Any otherwise-legal *Raw Stock* that has been post-processed by drilling, machining, or otherwise removing material	• Angle aluminum with regularly-spaced holes or slots • Perforated sheet metal
2	Extrusions that do not fall under one of the categories listed in <VUR4>	• Non-rectangular aluminum extrusions, such as 80/20, T-slot, or Octanorm • Gear stock
3	Assembled items (or pre-arranged kits of unassembled items) that form a single, more complex component	• Gearboxes • Claw mechanisms • Swerve drive modules
4	Commercial Off-the-Shelf items that are intended to be used with minimal modification	• Wheels • Gears • Timing belts and pulleys
5	Materials that are intended to be cast or sintered	• Resin / powdered-bed 3D printing • Molten aluminum used for sand casting

<VUR6>: The pieces made cannot be made from materials that pose a risk to the match, to other equipment or field elements. Examples:

a. Any material that may produce flames or pyrotechnic effects..

b. Any material that is liquid. Examples: hydraulic fluids, oils, fats, etc.

c. Any matter that comes out of a component and is at risk.

<VUR7>: The pieces must be designed and produced exclusively by team members.

a. An engineering drawing (with multiple views) must be presented at least to demonstrate the design and manufacturing process..

b. Parts manufactured by third parties that are not part of the equipment are not allowed.

c. The lack of adequate documentation may cause the piece to be considered illegal for competition.

<VUR8>: The use of springs is allowed to store and release potential elastic energy in the robot.

a. Examples include compression springs, voltage, torsion, elastic tubes, elastic strings, and closed gas shock absorbers.

b. Gas shock absorbers cannot be modified.

<VUR9>: Supporting hardware is allowed available such as screws, screws, hinges, pins, hugs and adhesives (epoxy, glue, tape), as long as they are used to fix parts.

<VUR10>: Cada robot ha d'usar exactament un V5 Robot Brain i fins a dos V5 Robot Radis, connectats a un V5 Controller.

a. La comunicació sense fil està permesa només a través de V5 Robot Brains i Ràdios V5. No es permet connexions Bluetooth, Wi-Fi, etc.

<VUR11>:

a. There is no limit of V5 Smart Motors (11W) and EXP Smart Motors (5.5W) that can be used.

b. Other engines, servos or electronic actuators are not allowed.

c. Modifying gear engines and cartridges is prohibited.

d. Commercial pneumatic actuators are allowed according to <VUR13>.

<VUR12>: There is no limit to the use of additional sensors and other electronic devices for detection and processing, under certain conditions:

a. They must connect to the V5 Robot Brain through accessible ports and without modifying the microcontroller.

b. They cannot interact directly with VEX engines or solenoids.

c. They can receive energy from:

1. The V5 Robot Brain.
2. An additional battery (one limit), with a nominal maximum of 12V.

d. Only the V5 battery can feed the V5 Brain.

e. Only pneumatic solenoids are allowed.

<VUR13>: Equipment can use an unlimited amount of commercial tire components.

a. Pneumatic devices can only be charged up to a maximum of 100 psi.

b. No type of compressor or air load is allowed in the robot.

c. All components must be classified for 100 psi or more, and teams must be able to demonstrate this rating.

d. It is possible to modify only ciertos aspectos but not modify the components in their function.

e. The 12V solenoids must meet the conditions of Additional Electronics. They cannot receive energy when the robot is in "Disabled" mode.

<VUR14>: Commercial bearings can be used in the robot.

a. Examples of rolling bearings: radial bearings, rollers, thrusting, needles, unidirectional bearings and bujes.

b. Examples of bearings for linear movement: linear bearings, linear splitters, drawer splitters.

<VUT1>: 1v1 format and u of two robots:

a. Matches 1 team vs 1 team with two robots per team (one of each size specified). Teams can build as many robots as they want, but they can only bring two to the field. All robots must pass inspection before competing.

<VUT2>: Classification parties:

a. They will be done as in a V5RC tournament, but in 1v1 format.

<VUT3>: Elimination matches:

a. No alliance selection. A single team will be the champion.

<VUT4>: Autonomous period:

a. It lasts 30 seconds, without human interaction. If the two teams finish earlier, they can agree to finish it with arbitration.

<VUT5>: Driver control period:

a. It lasts 90 seconds and begins just after the autonomous period.

<VUT6>: Drive Team Members

a. Each robot may have up to three team members at the alliance station during a game, modified from standard <G8>.

<VUT7>:

a. The members of the VEX U team must be enrolled in a post-secondary institution or have obtained an equivalent diploma or certificate in the six months prior to the VEX Robotics World Championship.

b. Professionals who are not enrolled in post-secondary education cannot participate in a VEX U team.

c. Students enrolled in both a secondary school and post-secondary courses are not eligible to participate in a VEX U team.

d. Members of a VEX U team can only be on a single team during the season.

Robot Skills Challenge Modifications

The rules of sections 5 and 6 apply, but 2 robots and up to 3 team members per robot are allowed, according to <VUT1>, <VUT6> and <VUR1>.

<VURS1> Field Layout:

a. They change the initial positions of the rings and mobiles, and blue rings are added.

<VURS2> Initial positions:

a. The two robots must begin in legal positions for the red alliance. The rest of <SG1> applies.

<VURS3> Without Preloads:

a. There are no preloads in VURC Robot Skills matches.

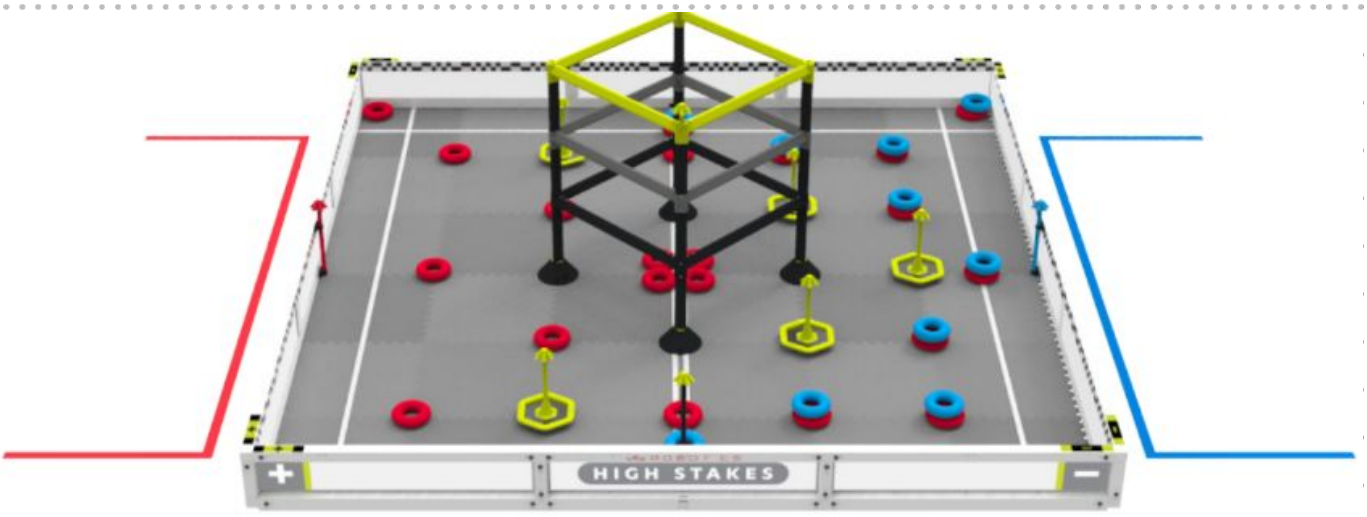
<VURS4> Blue Ring Value:

a. Blue rings only count if:

1. All red rings have been punctuated.

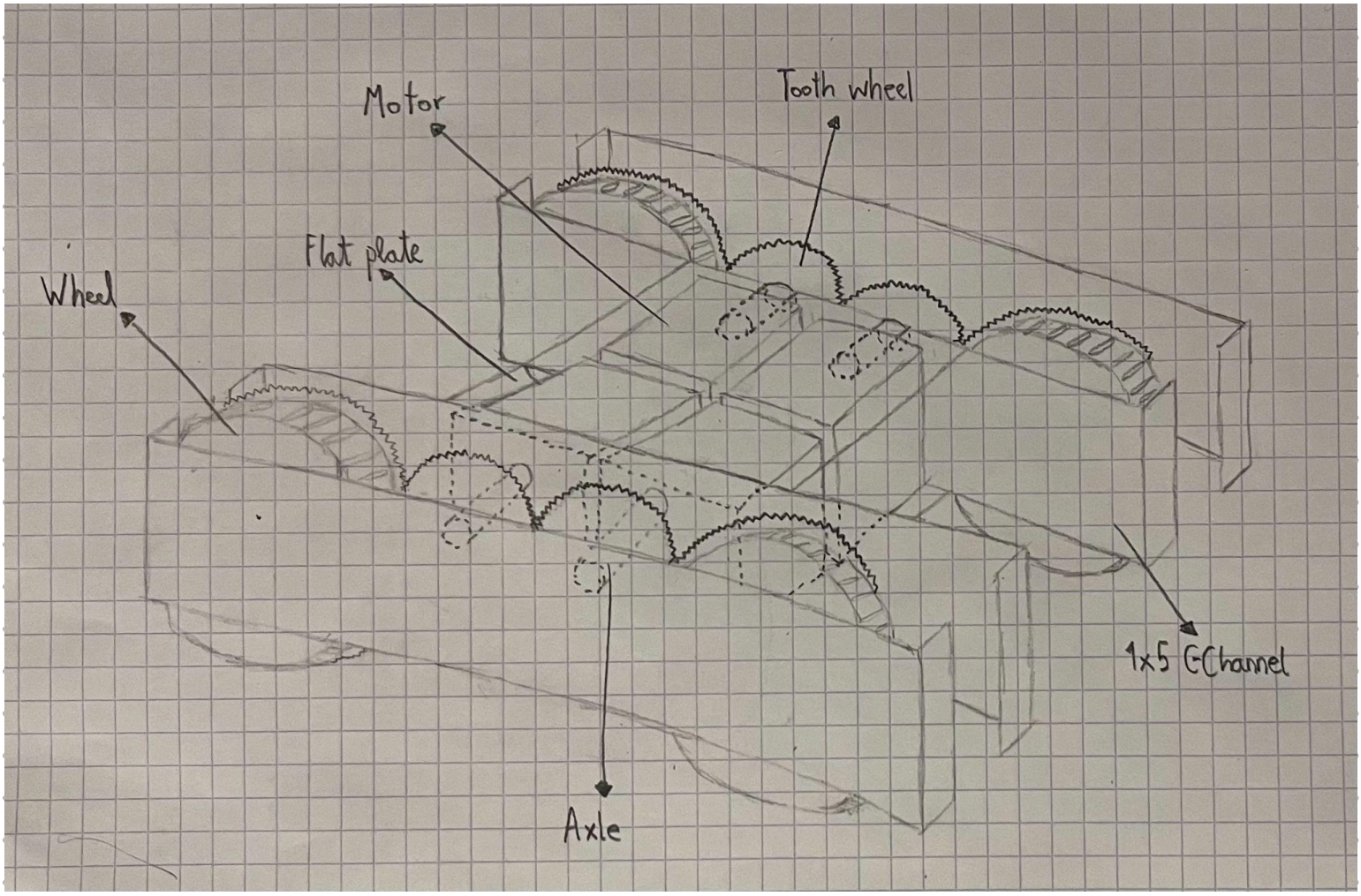
2. At least one red ring is under the blue ring on the same spot.

3. There are no red rings above the blue rings.



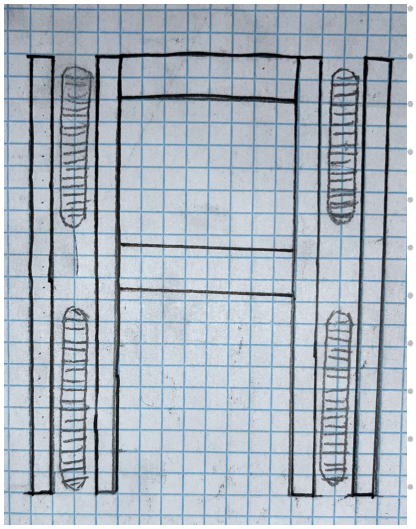
Part 2: Explorar

1st robot sketch



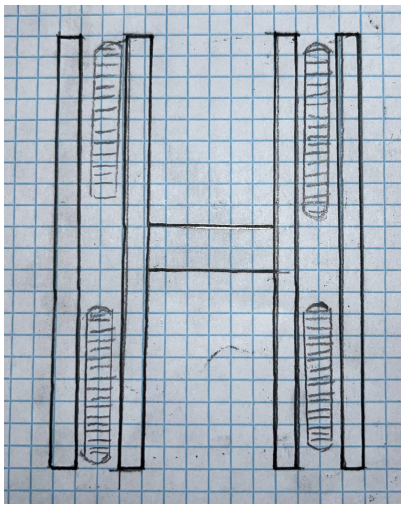
This base is the robot 1 base, the picker. The picker will be exclusively dedicated to collecting and placing rings, in this way it will not be entertained with other tasks and will be at the maximum disposal to score as much as it can with the rings. We have decided to use 4 motor which, one for each wheel because we want it to be robust and fast, since this robot will be more exposed at the time of the match.

First Robot: Picker



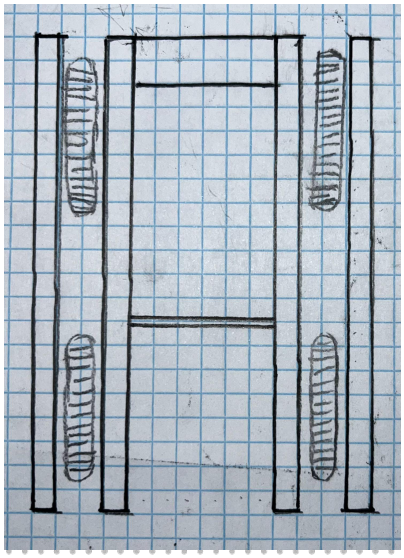
Model U:

The U base model only has one bar that joins the two sides and is placed on one of the sides, making the base have a lot of distribution space.



Model H:

The H base model has a single joint between the two sides, and it is in the middle of the base, making it more resistant, but it has a different distribution of spaces.



Model A:

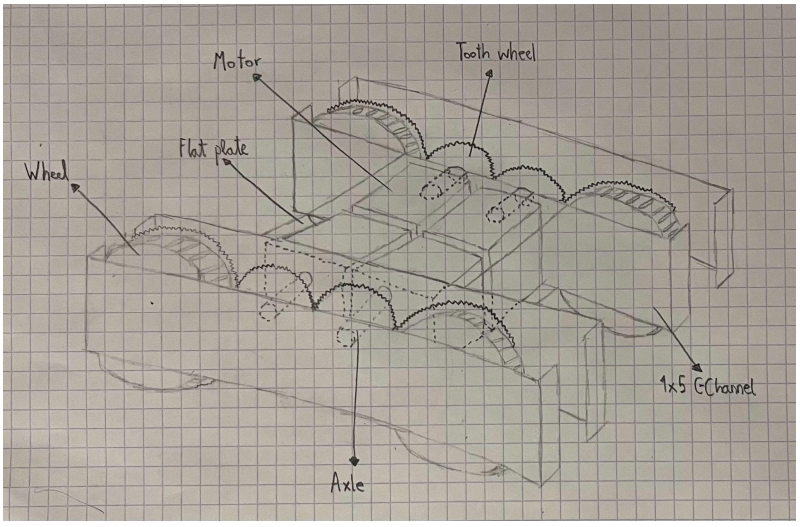
The base model A has two joints, one in the middle and another on one of the two sides, which makes it more resistant, but also weighs much more.

First Robot: Picker

WOT TABLE: **Recollidor**

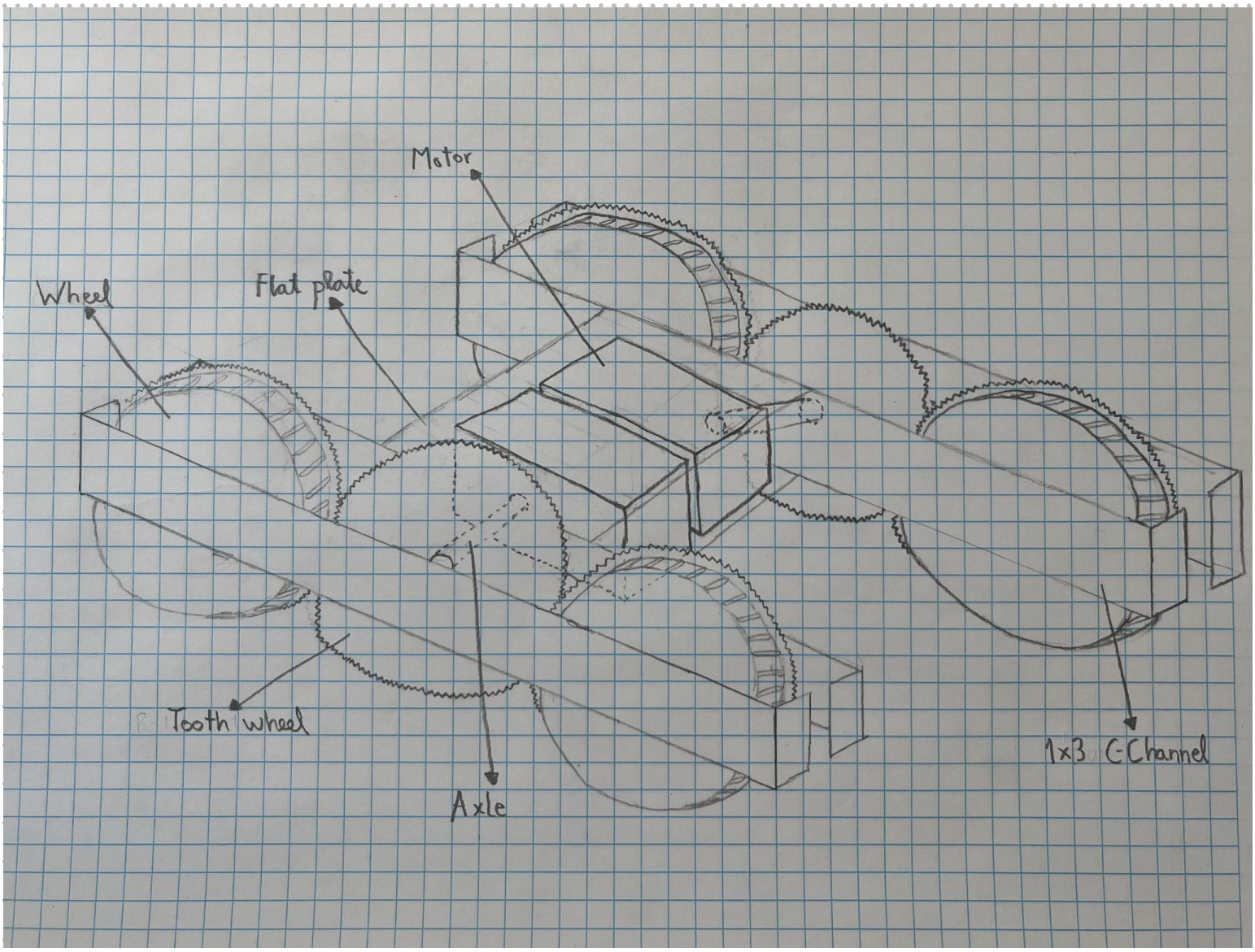
Characteristic	**%**
Weight	15%
Strength	20%
Ease (construction)	20%
Safe material	20%
Space distribution	25%

Models	**H model**	**U model**	**A model**
Weight	15%	15%	10%
Strength	16%	12%	20%
Ease (construction)	17%	20%	10%
Safe material	12%	16%	20%
Space distribution	25%	20%	17%
Total:	**85%**	**83%**	**77%**



Model H is the best option, since it has better space distribution and with that we can put the dustpan in front, and behind the base where the donuts are inserted. Because we need the first robot to be resistant because it will be in charge of collecting the rings and collecting the bases. It also has to be protected, which is why the bar covers the wheels.

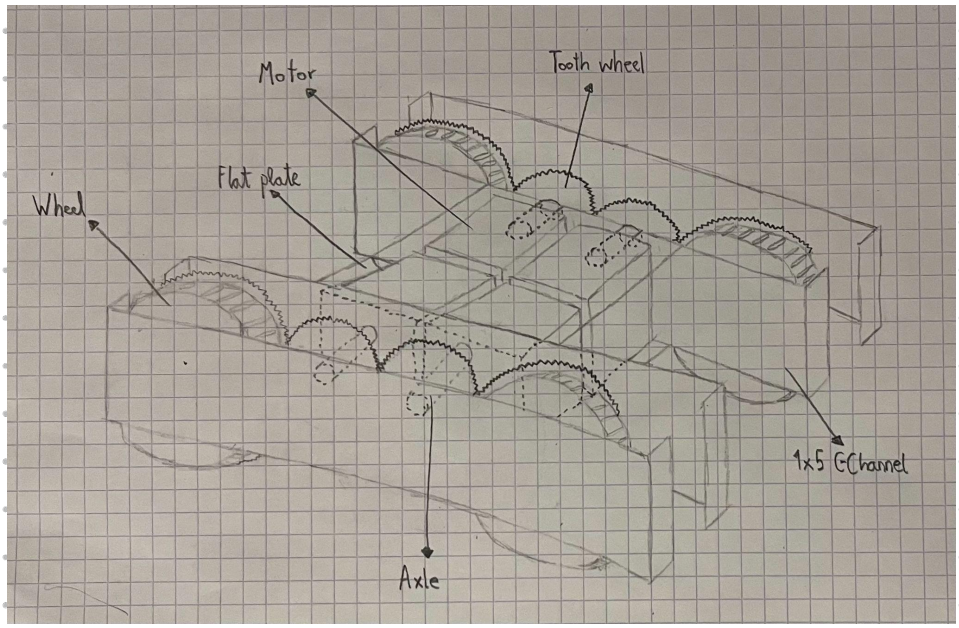
2ND ROBOT SKETCH

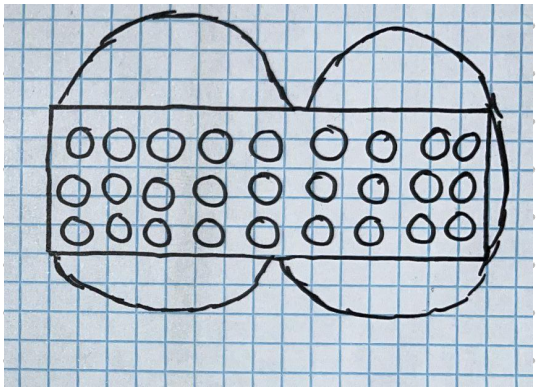


This base is that of robot 2, the alternative. The alternative will be dedicated to hanging from the bar and in addition to interacting with the bowls, in this way we will distribute the tasks to be able to score as much as possible. We have decided to do it with bars of 3 and 2 motors dedicated to the wheels because we want it to be light, since this robot will not have to move much during the game.

Big Robot: Picker

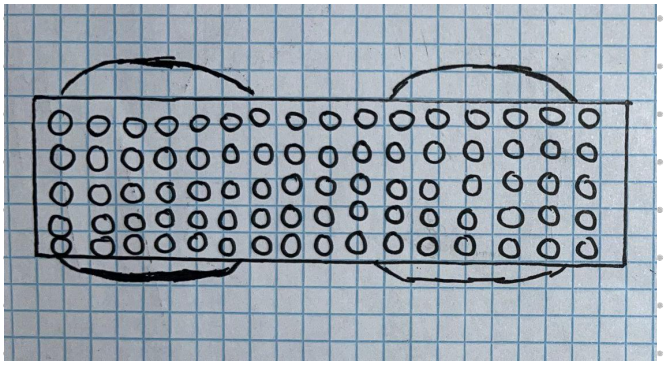
Our idea for the second robot was to do the same base as the first one with a few changes. Lighter channels, fewer motors, fewer gears…





Channel 3 hole:

The channel with 3 holes is less resistant, since it is smaller and weighs less, but if what you are looking for is lightness it is the best



Channel 5 hole:

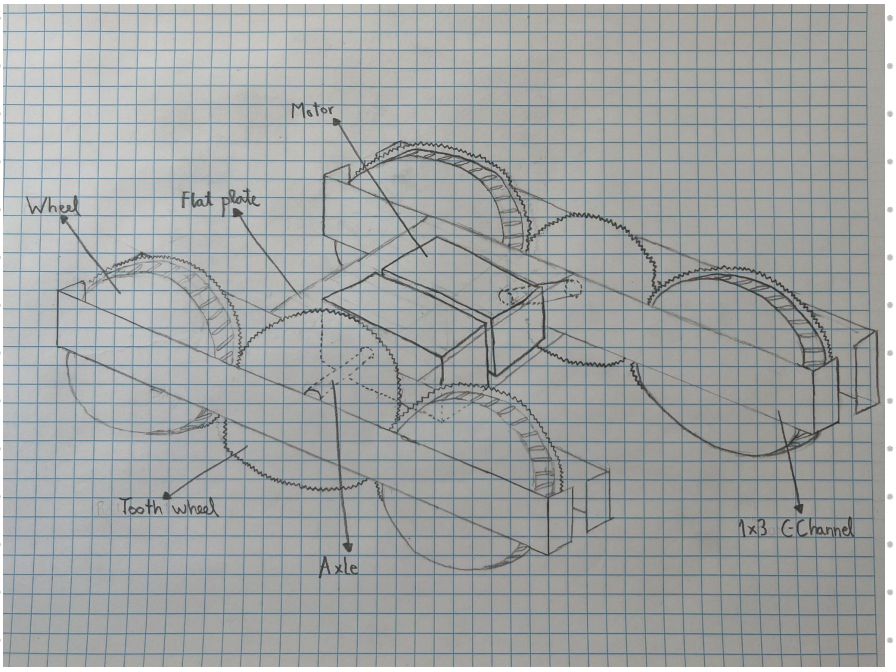
It is more resistant, since it is larger and weighs more, so it protects much more and is safer for the robot

Small Robot: Climber

WOT TABLE: **Climber**

Characteristic	**%**
Weight	45%
Strength	20%
Protection	35%

Channel	**Channel 3 hole**	**Channel 5 hole**
Weight	45%	35%
Strength	15%	20%
Protection	25%	35%
Total:	**85%**	**90%**



Since alternative will be the one that stays in the air and takes off the rings, we want it to weigh very little, so that's why we sacrifice other things, to make it is lighter. We will use the same base as the first robot, but changing from 4 motors, one for each wheel, to 2 motors, one motor for each two wheels, using a gear transmission. Instead of 5 gears each side, 3 gears and lighter channels.

Picker and Climber: WHEELS

Omni wheels:
This wheel has a good turning angle, since if it is turned sideways it moves laterally, and they do not weigh much and are quite fast.

Traction wheels:
These wheels are light and very fast, but the turning angle is more limited.

Mecanum wheels:
These wheels weigh a lot and are slower, but they have a lot of turning angle.

Picker and Climber: WHEELS

WOT TABLE: **Wheels**

Characteristic	**%**
Speed	30
Weight	50
Turning angle	20

TYPES OF WHEELS	**Mecanum wheels**	**ovni wheels**	**traction wheels**
Speed	15%	27%	30%
Weight	25%	45%	50%
Turning angle	20%	17%	8%
Total:	60%	89%	88%

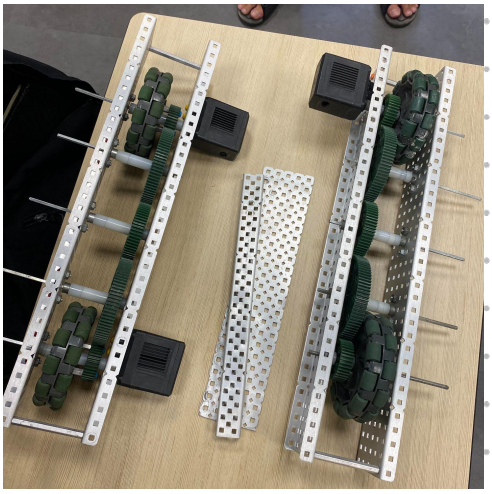
First, we had tried to place the mecanum wheels to test. But after seeing the essential things that we needed for our robot (thanks to the wot tables) we have come to the conclusion that the ovni wheels would be much more useful to us. Since in proportion to weight, speed and angle of rotation is more efficient for Us.

Day a day

DIA 1 / 30-08-2024

Marti Quera: During this lesson, I have started to design the Climber base, which will be dedicated exclusively to elevation and some minor tasks.

Marc Ruiz: Today, I've been fixing the errors that the robot had. With Ramiro, I readjusted the wheel and changed some bars so that it has an H shape instead of a U.



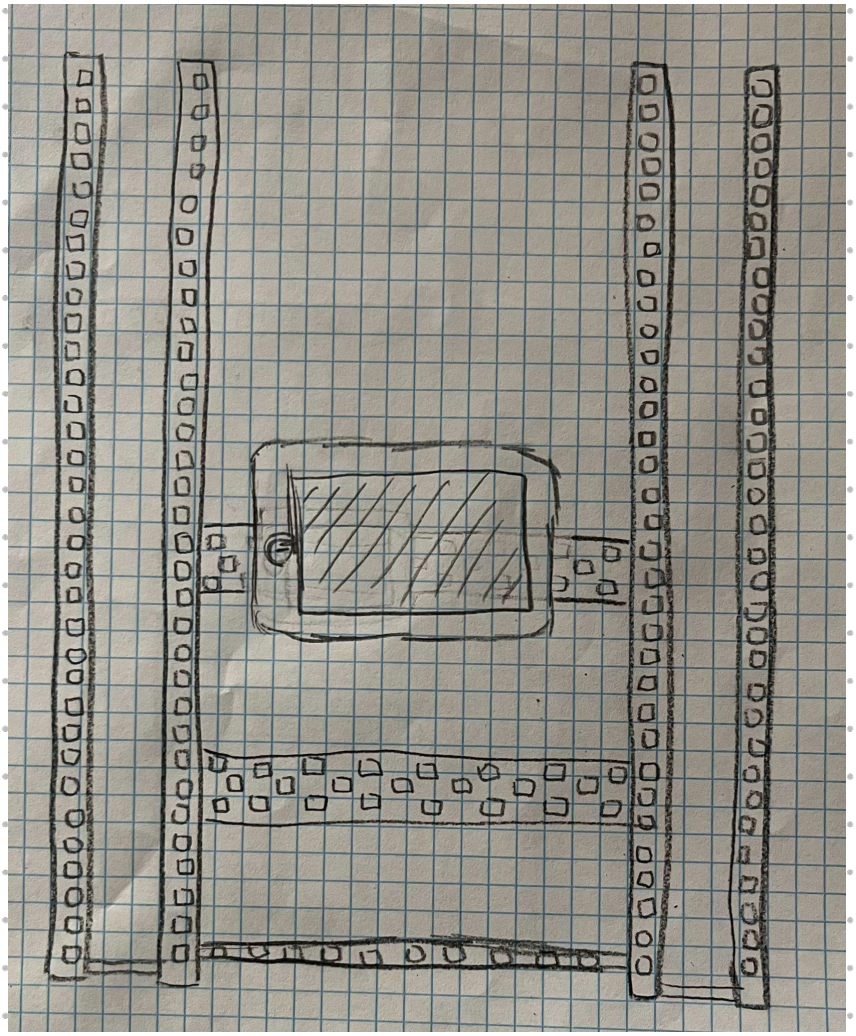
Ramiro De La Hoz: Today, I've been fixing the errors that the robot had. With Marc Ruíz, I readjusted the wheel and changed some bars so that it has an H shape instead of a U.

Álvaro Expósito: Today Marc Bigorra, Álvaro Expósito and I, have created the WOT tables to determine which base to use for each robot and also which type of bar to choose for Climber.

Julen Bosch: During this class I've been searching for companies who could be a sponsor for our robots during the competition.

Marc Quiñones: Today I've been searching for sponsors and creating a welcome text about us so that we can have a presentation.

Marta Heredia: During these hours I have designed the base of the Picker in Onshape. We were inspired by the sketch but we finally decided to change it a bit to make it easier to build it in the future.



Gabriel Luque: Today Ariel I, have imported parts for the design of Climber. We've also been watching some robot lifting videos to inspire.

Ariel Miranda: Today Gabriel and I, have imported parts for the design of Climber. We've also been watching some robot lifting videos to inspire.

Marc Bigorra: Today Alvaro Exposito and I, have created the WOT tables to understand which base we should use for each robot and also what type of bar to choose for Climber.

DIA 2 / 07-09-2024

Marti Quera: Today I've been fixing the Engineering Notebook and making sure everyone does a task such as building the robot base, designing, and improving some aspects of the Engineering Notebook to make it more clear and professional.

Marc Ruiz: Throughout this session, Ramiro De la Hoz and I have been assembling and finishing what was missing from the base.

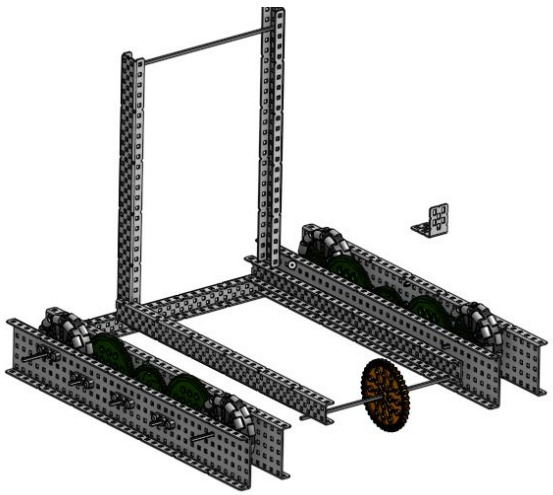
Ramiro De La Hoz: Today Marc Ruíz and I have been working on the base and thinking about the next steps about it.

Alvaro Exposito: Today Pejan told us to fix the WOT tables with images and that is what I have done, I have filled in all the texts of the WOT tables and all the possibilities, with photo examples.

Julen Bosch: Today I've been modifying the engineering notebook template and organizing everything well. Me and Marc Quiñones also been looking for sponsors like this one: **daxa@daxasistemes.com.**

Marc Quiñones: Today I've been modifying the engineering notebook template and organizing everything well. Me and Julen also been looking for sponsors like this one: **daxa@daxasistemes.com.**

Marta Heredia: Today I have been looking for videos of chain lifting methods to lift rings. I then started onshape layout to place the pieces I thought were needed to make the elevation.



Gabriel Luque: I've been doing robot design and thinking about new ideas to improve it.

Ariel Miranda: I have been exploring ideas to enhance the 'Climber' robot, focusing on features that will elevate the entire robot.

Marc Bigorra: Today Alvaro Exposito and I have been fixing the WOT tables. We've also been drawing/making a design of the Climber from different perspectives to be able to see more clearly how to assemble them and to see what type of design we are going to use.

DIA 3 / 09-09-2024

Marti Quera: I've been fixing the Engineering Notebook and making sure everyone does a task such as building the robot base, designing, and improving some aspects of the Engineering Notebook to make it more clear and professional.

Marc Ruiz: Today Marta, Ramiro and I have been turning the outside bars of the Picker and readjusting the axes.

Ramiro De La Hoz: Today Marc, Marta and I have been turning the outside bars of the Picker and readjusting the axes.

Alvaro Exposito: Today I have put all the photos of the drawings of the bases and all the texts justifying each base, I have also solved the adjustments that Pejan told us we had to make in the WOT tables of the engineering notebook.

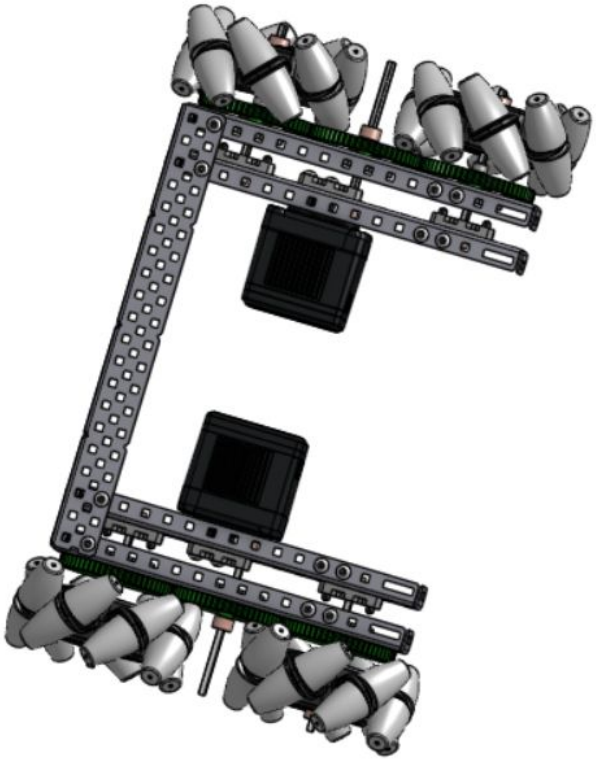
Julen Bosch: Throughout this lesson, Marc Quiñones and I have been modifying the template even more and I helped Quiñones translate the Engineering Notebook.

Marc Quiñones: Today Julen and I were translating the engineering notebook and modifying things, then we were searching for more posibles sponsors.

Marta Heredia: Today Marc, Ramiro and I have been turning the outside bars of the Picker and readjusting the axes.

Gabriel Luque: My partner Ariel and I have been thinking and discussing the design, combining our ideas to make another step on the final base.

Ariel Miranda: I have reviewed the wheel design options and identified some errors in the design. I am currently in the process of correcting these issues to ensure everything functions as expected.

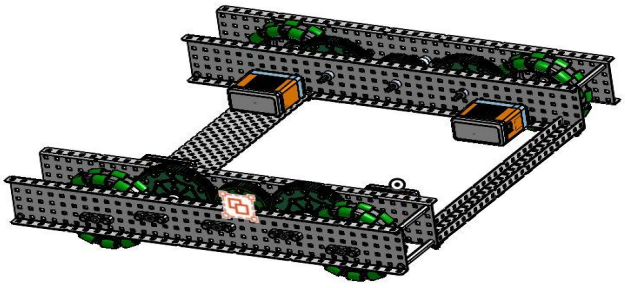


Marc Bigorra: Today Marti Quera and I have been translating and fixing the engineering notebook so that it is clearer and more professional.

DAY 4 - 14/10/2024

Marti Quera: I've been leading the team and making sure everyone does some task such as designing, building or searching information for developing the robot.

Marc Ruiz: Today, Marta, Ramiro and I have been building the Picker, we've thinked, designed and started to build the transmission for the rings. How the robot will collect them and put them into the stake.



Ramiro De La Hoz: Today, Marta, Marc Ruiz and I have been building the Picker, we've thinked, designed and started to build the transmission for the rings. How the robot will collect them and put them into the stake.

Alvaro Exposito:
I was checking the two bases, to see if it matches the base with our robot Picker. I was with Ariel looking at the design and thinking about dustpan ideas.

Julen Bosch: Me and Marc, were searching a robot from the internet for the idea that most resembles ours. I have been watching inspiration videos for the robot so that the bar can be raised and I have found 3 videos that may be useful to us. I have put them in a document and shared it with the captain.

Marc Quiñones: Me and Julen, were searching a robot from the internet for the idea that most resembles ours, then we looked for challenges from other years to see if any were similar to this one to get an idea for the robot.

Marta Heredia: Today, Marta, Marc Ruiz and I have been building the robot, we've thinked, designed and started to build the transmission for the rings. How the robot will collect them and put them into the stake.

Gabriel Luque: Today Ariel and I have thinked how we could change the base because our teacher Maikel told us we couldn't use a base which was already designed, so we decided to redesign the base making it better and lighter, so then the robot is easier to elevate.

Ariel Miranda: Today Gabriel and I have thinked how we could change the base because our teacher Maikel told us we couldn't use a base which was already designed, so we decided to redesign the base making it better and lighter so then the robot Climber is easier to elevate.

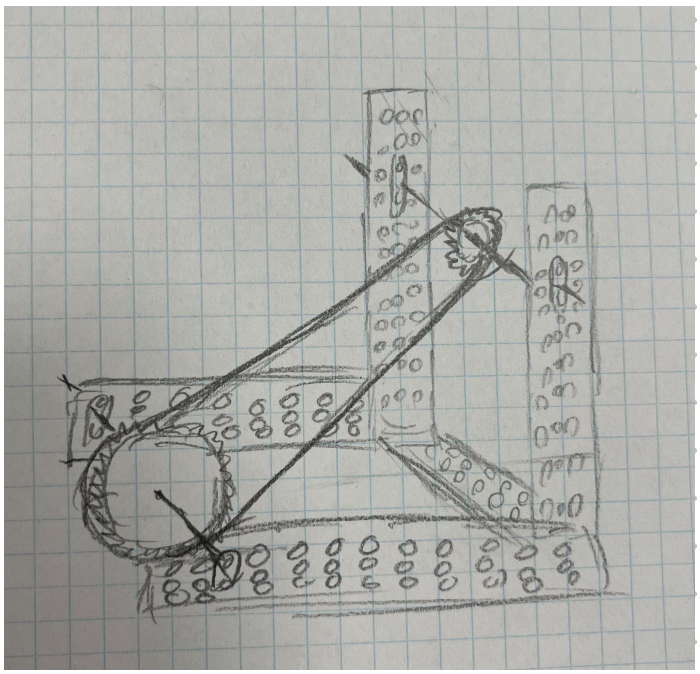
Marc Bigorra: I've been fixing the engineering notebook to make sure all the margins and everything was organized, also translating it to english.

DAY 5 - 16/10/2024

Marti Quera: Today I've been searching for a way to "Alternative", I've discussed with Pejan and with two other teammates about what would be the best idea.

Marc Ruiz: Today, Marta, Ramiro and I have started the construction of the collector. Then I made a paper prototype of the hook that picks up the piece.

Ramiro De La Hoz: Today, Marta, Marc and I have started the construction of the collector. Then I made a paper prototype of the hook that picks up the piece.



Alvaro Exposito: Today I have been doing the WOT tables to choose the wheels for the two bases with Marc Bigorra, we have written the definitions of the different prototypes to compare them easilier.

Julen Bosch: He wasn't here/he hasn't done anything

Marc Quiñones: He wasn't here/he hasn't done anything

Marta Heredia: Today, Marc Ruíz, Ramiro and I, have started the construction of the collector for Picker. Then I made a paper prototype of the hook that picks up the piece.

Gabriel Luque: During this lesson Martí and I, have been searching and thinking about how the elevator of the “Climber” robot could be. I’ve also been designing the base for the “Climber”.

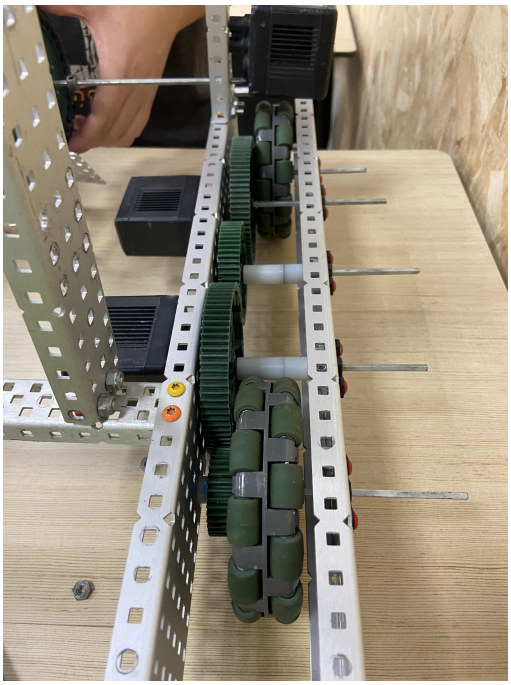
Ariel Miranda: Today I’ve been changing some parts of the “Alternative” robot base to make it better. I’ve talked with Martí about how we should distribute and design some parts of the robot such as the elevator.

Marc Bigorra: Today Alvaro and I, have made the WOT tables to choose the wheels for the two bases, we have written the definitions and the percentages.

DAY 6 - 23/10/2024

Marti Quera: I've been organizing the team and working closely with Gabriel to explore the different types of lifting mechanisms for Climber. Our goal for today was to determine the most effective solution, so we did it. We created a document explaining some details of it.

Marc Ruiz: We have disassembled the wheels to relocate the motors and position them more centrally, as they were exceeding the 45 cm mark. After making the necessary adjustments, we reassembled everything to ensure optimal functionality and balance.



Ramiro De La Hoz: We have disassembled the wheels to relocate the motors and position them more centrally, as they were exceeding the 45 cm mark. After making the necessary adjustments, we reassembled everything to ensure optimal functionality and balance.

Alvaro Exposito: Today I have put all the definitions of wheels, the WOT tables of the wheels and the explanation of why we have put the wheels. I have put all this in the notebook well organized and so that it looks good visually.

Julen Bosch: Marc Quiñones and I, have been adding some information about the last day and today in the Engineering Notebook.

Marc Quiñones: Julen Bosch and I, have been adding some information about the last day and today in the Engineering Notebook.

Marta Heredia: We have disassembled the wheels to relocate the motors and position them more centrally, as they were exceeding the 45 cm mark. After making the necessary adjustments, we reassembled everything to ensure optimal functionality and balance.

Gabriel Luque: I collaborated with Ariel to refine the design, focusing on the details to enhance its overall functionality. Additionally, I will be organizing the team and coordinating with Martí to examine the type of lifting mechanism for Climber, ensuring it meets our project requirements effectively.

Ariel Miranda: I collaborated with Gabriel to refine the design, focusing on the details to enhance its overall functionality.

Marc Bigorra: Today I have been writing down everything that we have implemented in the robot and why so that whoever reads it can be clearer about the step by step of assembling the robot.

DAY 7 - 30/10/2024

Marti Quera: I have been leading the group so that everyone has a task to help improve the robot in every way(design, mechanic, engineering notebook…). I have also been assembling the second robot.

Marc Ruiz: Today, Ramiro De La Hoz, Marta and I, have successfully completed the assembly of Picker. We worked together to ensure that each component was installed correctly and that the robot functions as intended. Picker is now fully assembled and ready for further testing or adjustments.

Ramiro De La Hoz: Today, Ramiro De La Hoz, Marta and I, have successfully completed the assembly of Picker. We worked together to ensure that each component was installed correctly and that the robot functions as intended. Picker is now fully assembled and ready for further testing or adjustments.

Alvaro Exposito: During this lesson, we realized we only have one box, and we needed two, so Marc Bigorra and I emptied an entire one to be able to put our material and organize the material that was inside the box. We have also been assembling the robot to advance faster in the assembly.

Julen Bosch: During this lesson, I have been helping Marc and Marta on building Climber. They have been assigning me some small but important tasks.

Marc Quiñones: He wasn't here/he hasn't done anything.

Marta Heredia: Today, Ramiro De La Hoz, Marta and I, have successfully completed the assembly of Picker. We worked together to ensure that each component was installed correctly and that the robot functions as intended. Picker is now fully assembled and ready for further testing or adjustments.

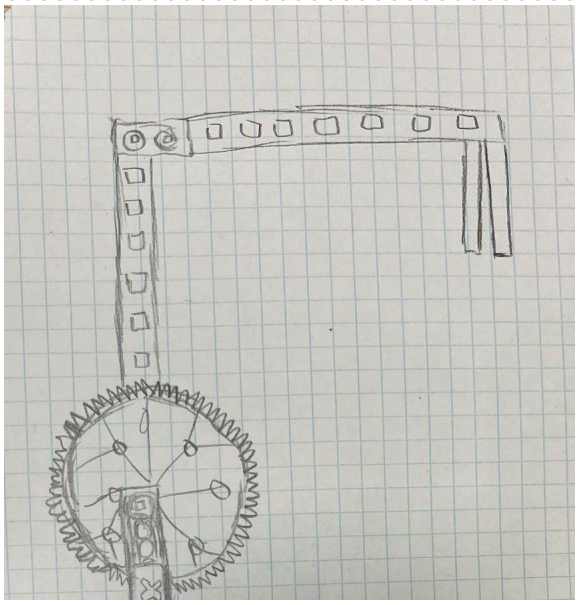
Gabriel Luque: Today, together with Martí, I've been working on assembling some parts. Martí's assistance was a great help throughout the process, and his support made it easier to troubleshoot and fine-tune the assembly.

Ariel Miranda: I have seen the flaws in the design and corrections that can be made and I have been correcting them during this lesson.

Marc Bigorra: During this lesson, we realized we only have one box, and we needed two, so Alvaro Exposito and I emptied an entire one to be able to put our material and organize the material that was inside the box. We have also been assembling the robot to advance faster in the assembly.

DAY 8 - 06/11/2024

Marti Quera: Gabriel and I have discussed it and come to a final decision: we're not going to proceed with the elevation design we originally had in mind. After reviewing the options and having a conversation with Pejan, we realized that the initial plan might not be the best. So, after considering alternatives, we decided it would be better to go on with a different elevation design that is easier to bring it to real life.



Marc Ruiz: We have been assembling the robot, working on putting together its various components and making sure each part is correctly installed and functioning as intended.

Ramiro De La Hoz: I have been working on designing Picker, making continuous progress and improvements to its overall design. My focus has been on advancing different aspects of the design to refine and develop the concept further.

Alvaro Exposito: I've been reviewing the design on Onshape, carefully examining its details and making adjustments as needed. I also made some corrections in my notebook, likely documenting important changes or insights. Additionally, I watched a YouTube video related to the project, possibly to gain new ideas or to learn techniques that could help improve the design

Julen Bosch: Marc Quiñones and I have been making adjustments to our daily tasks, refining our day-to-day plan to keep it organized and effective. We've also been reviewing the notebook, checking over our notes and making any necessary updates or clarifications.

Marc Quiñones: Today, Julen and I, have been making adjustments to our daily tasks, refining our day-to-day plan to keep it organized and effective. We've also been reviewing the notebook, checking over our notes and making any necessary updates or clarifications.

Marta Heredia: We have been assembling the robot, working on putting together its various components and making sure each part is correctly installed and functioning as intended.

Gabriel Luque: We have been assembling Climber, carefully putting together each of its parts and ensuring that all components fit and function properly as we progress through the build.

Ariel Miranda: We have been assembling Climber, carefully putting together each of its parts and ensuring that all components fit and function properly as we progress through the build.

Marc Bigorra: I've been doing the design on onshape and I've watched a YouTube video about the project to bring new ideas to the team.

DAY 9 - 11/11/2024

Marti Quera: Today, Gabriel, Marc Quiñones and I have been building and adjusting some parts of the Climber base. We have thinked and designed how to build some parts of the robot so it is as lightweight as possible.

Marc Ruiz: Today, Marta and I have been thinking and designing the part of Picker that takes and holds the donut holder. We finally decided to put it in the back of the robot because the donut elevator is on the front.

Ramiro De La Hoz: He wasn't here/he hasn't done anything.

Alvaro Exposito: Marc Bigorra and I, today we have been correcting everything day by day, asking each person what they have done, because there were previous days when they had not posted anything. Then we have taken many photos of the robot and drawings to put them in day by day so that it is better understood.

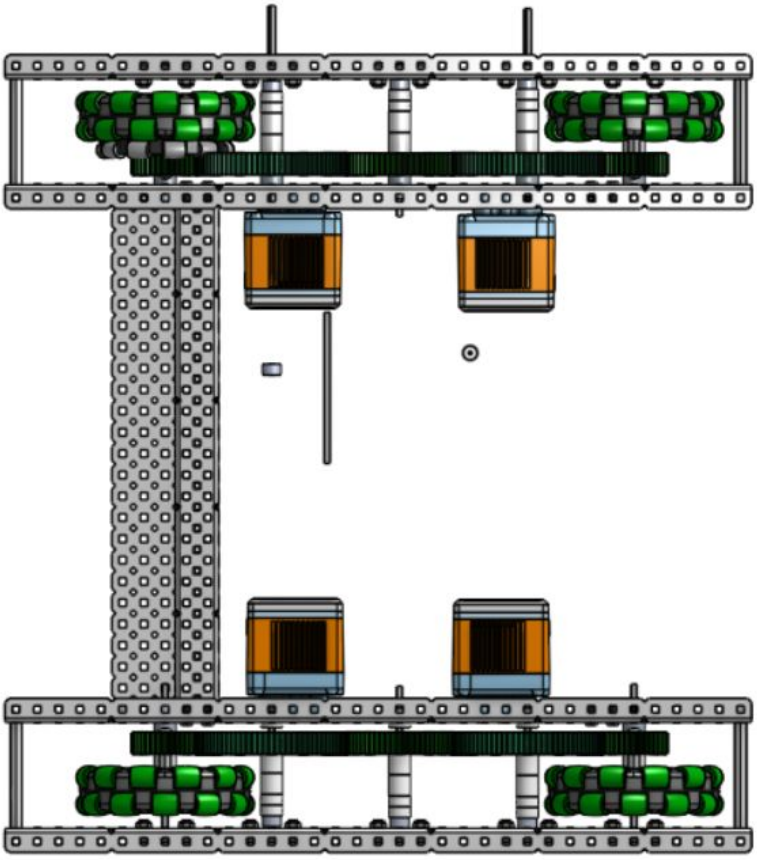
Julen Bosch: Today I improved the Engineering Notebook, among other things, and I also helped assemble the robot.

Marc Quiñones: Today, Gabriel, Martí and I have been building and adjusting some parts of the Climber base. We have thinked and designed how to build some parts of the robot so it is as lightweight as possible.

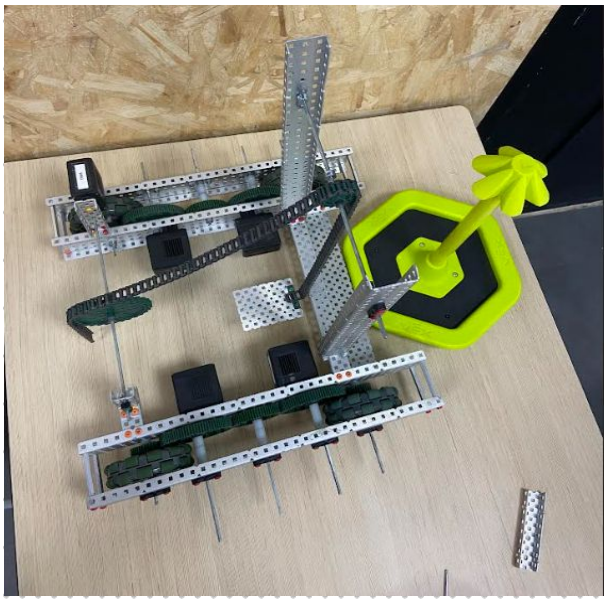
Marta Heredia: Today, Marc Ruiz and I have been thinking and designing the part of Picker that takes and holds the donut holder. We finally decided to put it in the back of the robot because the donut elevator is on the front.

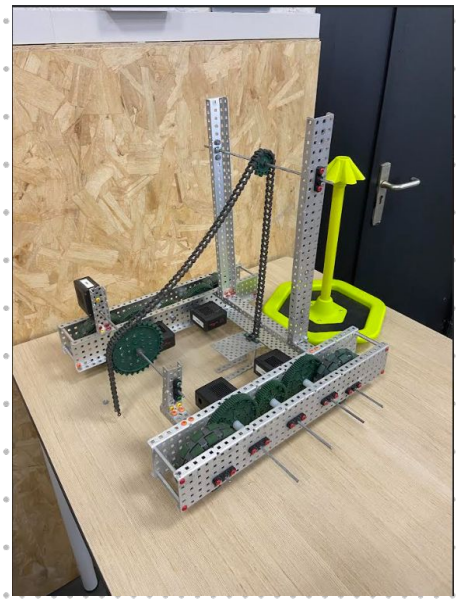
Gabriel Luque: Today, Martí, Marc Quiñones and I have been building and adjusting some parts of the Climber base. We have thinked and designed how to build some parts of the robot so it is as lightweight as possible.

Ariel Miranda: During this class, I have been designing some changes we've made to the base of the Picker.



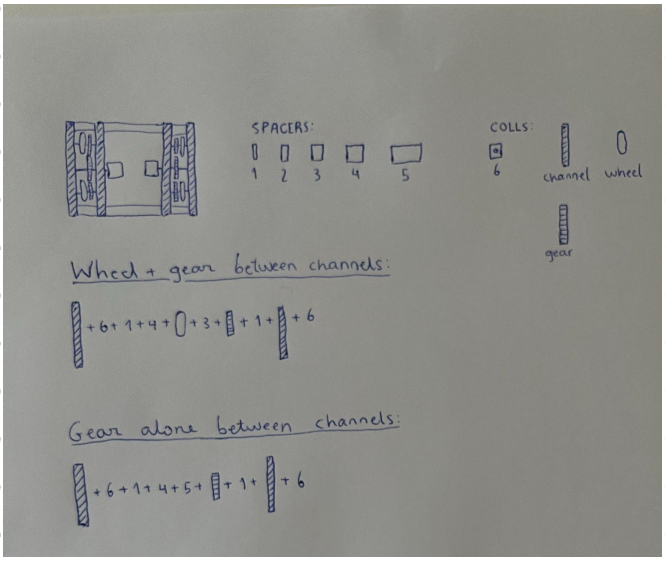
Marc Bigorra: Alvaro Exposito and I, today we have been correcting everything day by day, asking each person what they have done. Then we have taken some photos of the robots and drawings to put them in day by day so that it is better understood.





DAY 10 - 13/11/2024

Marti Quera: Today, Ariel, Marc Quiñones and I have been thinking and sketching how the Picker wheels will be holded. We have designed a system to keep all of them secure and strong so they cannot move in any direction we don't want to with any vibration.



Marc Ruiz: Marta and I spent time assembling a component for the robot that secures the donut holder. We also explored various options for where to place the servo to make sure it would function smoothly within the overall design. After testing different placements and considering how it would affect the robot's performance, we decided that our original approach might not be the most effective. In the end, we chose an alternative method that we believe will work better for the robot's structure and purpose. This new solution should provide greater stability and efficiency.

Ramiro De La Hoz: He wasn't here/he hasn't done anything.

Alvaro Exposito: I have been actively assisting with the work on Climber, contributing to various tasks and ensuring everything is properly documented. By filling in these empty days, we aim to maintain a complete and thorough record of our ongoing work, which will be valuable for tracking our progress and keeping the project organized and transparent.

Julen Bosch: I have been actively assisting with the work on Climber, contributing to various tasks and ensuring everything is properly documented. Each day, I've been updating the notebook with the progress and relevant details. Additionally, I've been collaborating closely with Alvaro Exposito, and Marc Bigorra especially since there were many days that had gaps or missing entries.

Marc Quiñones: Today, Ariel, Martí and I have been thinking and sketching how the Picker wheels will be holded. We have designed a system to keep all of them secure and strong so they cannot move in any direction we don't want to with any vibration.

Marta Heredia: Marc Ruiz and I spent time assembling a component for the robot that secures the donut holder. We also explored various options for where to place the servo to make sure it would function. We decided that our original approach might not be the most effective. At the end, we chose an alternative method that we believe will work better for the robot's structure and purpose. This new solution should provide greater stability and efficiency

Gabriel Luque: He wasn't here/he hasn't done anything.

Ariel Miranda: Today, Martí, Marc Quiñones and I have been thinking and sketching how the Picker wheels will be holded. We have designed a system to keep all of them secure and strong so they cannot move in any direction we don't want to with any vibration.

Marc Bigorra: I have been actively assisting with the work on Climber, contributing to various tasks and ensuring everything is properly documented. Each day, I've been updating the notebook with the progress and relevant details. Additionally, I've been collaborating closely with Alvaro Exposito, especially since there were many days that had gaps or missing entries.

DAY 11 - 18/11/2024

Marti Quera: I was saying what they had to do, also what was missing and talking about possible changes to the robot. Things that we saw that didn't quite fit.

Marc Ruiz: Marta and I have been assembling Picker with the idea of how to assemble the donut collection mechanism without pistons.

Ramiro De La Hoz: He wasn't here/he hasn't done anything.

Alvaro Exposito: He was not here, so he didn't do anything.

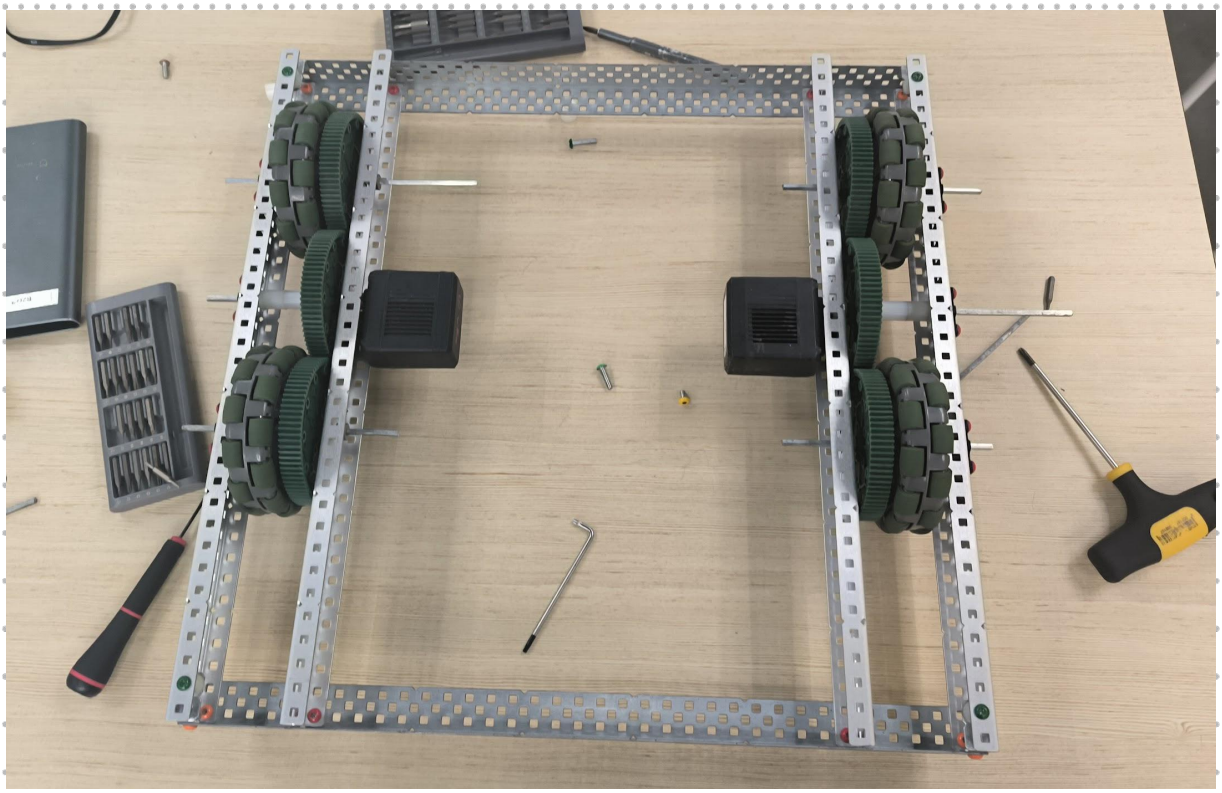
Julen Bosch: Marc Quiñones, Marc Bigorra and I have been assembling Climber and proposing new mechanisms to make the robot weigh less. And we start to ride a little above.

Marc Quiñones: Julen, Marc Bigorra and I have been assembling Climber and proposing new mechanisms to make the robot weigh less. And we start to ride a little above, then we talk with Marti about the possible things that we see that don't fit.

Marta Heredia: Marta and I have been assembling Picker with the idea of how to assemble the donut collection mechanism without pistons.

Gabriel Luque: Today I have been designing in the onshape, the small robot since it was little advanced, we had already reached the construction point that we had the design done, I changed the things in the design that we had said about changing.

Ariel Miranda: Today we've made great progress and have just built the base of the Climber. It looks pretty good, better than we thought.



Marc Bigorra: Julen, Marc Quiñones and I have been assembling Climber and proposing new mechanisms to make the robot weigh less. And we start to ride a little above.

DAY 12 - 20/11/2024

Marti Quera: I have been organizing the group to keep everyone busy with assembling the robots. My main focus has been on Picker, as I took the lead in coordinating the construction of it. This involved overseeing the different stages of the process, ensuring that each part is properly placed and that the robot functions correctly in the end.

Marc Ruiz: We have been assembling the Picker, working on putting together its various components and making sure each part is correctly installed and functioning as intended.

Ramiro De La Hoz: He wasn't here/he hasn't done anything.

Alvaro Exposito: I've been working on Climber, focusing on fixing the mistakes we made earlier in the process. By analyzing the issues and identifying the areas where improvements were needed, I have been able to correct and refine the assembly of this robot. My goal has been to ensure that Climber is built to meet our specific requirements, addressing any flaws or errors that were present before. In addition to this, I've been helping my fellow team members with their robots, sharing knowledge and providing support where necessary.

Julen Bosch: I have been actively involved in assembling Picker, working closely with others who were also focused on building the same robot. Together, we have collaborated to ensure that every part of Picker is carefully put together according to the specifications. I have been guiding the team in following the assembly instructions step by step, helping to troubleshoot any issues along the way, and ensuring that each component fits perfectly.

Marc Quiñones: I have been actively assisting with Marc Bigorra for the work on Climber, contributing to various tasks and ensuring everything is properly documented. Each day, I've been updating the notebook with the progress and relevant details.

Marta Heredia: We have been assembling the Picker, working on putting together its various components and making sure each part is correctly installed and functioning as intended.

Gabriel Luque: I have been designing the small robot, applying the allowed measurements and part specifications. This involved carefully calculating and selecting the components to ensure proper fit and functionality.

Ariel Miranda: I was programming the robot with C++, then I was watching videos of the mobility that the robots had in the VEX challenges, to get an idea of how I could program it so that it could move. Gabriel helped me a little.

Marc Bigorra: He wasn't here/he hasn't done anything.

DAY 13 - 25/11/2024

Marti Quera: After talking with the teachers and looking into solutions for Climber, we realized that cutting the base is not necessary. We have replaced the bars, adjusted them, and switched the Keps Nut system for Nylock Nuts.

Marc Ruiz: We've made a lot of progress.. Every detail has been coming together bit by bit, and we're quite happy with the progress we've made so far. If everything continues like this, it will soon be ready to work and drive on the road.

Ramiro De La Hoz: He wasn't here/he hasn't done anything.

Alvaro Exposito: Today Marc Quiñones, Marc Bigorra and I, assembled the Climber, and we made some important changes to improve its performance. We replaced the gears with stronger ones because the previous gears kept coming off after impacts, which caused the robot to disassemble. This was a major issue, as it prevented the robot from functioning properly during operation. Additionally, we rearranged the position of the bars, as they didn't fit well between each other before. By adjusting them, we made sure everything aligned properly, which should make the robot more stable and reliable in the future.

Julen Bosch: I've been helping to assemble the Picker. We've made a lot of progress, we've been redoing the base with smaller bars and changing some nuts.

Marc Quiñones: Today Alvaro, Marc Bigorra and I, have been assembling the Climber. We replaced the gears with stronger ones because the previous gears kept coming off after impacts. Additionally, we rearranged the position of the bars, as they didn't fit well between each other before. By adjusting them, we made sure everything aligned properly, which should make the robot more stable. This involved carefully calculating and selecting the components to ensure proper fit and functionality.

Marta Heredia: We've made a lot of progress. Every detail has been coming together bit by bit, and we're quite happy with the progress we've made so far. If everything continues like this, it will soon be ready to work and drive on the road.

Gabriel Luque: Ariel and I have been replacing the bars because they didn't fit properly. So, I've been working on mounting the bar, making sure the gears were properly in place, and also tightening the nuts and bolts, ensuring everything was perfectly aligned and secured to avoid any issues or misalignment in the future. It's been a meticulous process, as each piece needs to fit precisely to ensure the proper functioning of the system.

Ariel Miranda: Gabriel and I were installing the bars that we were supposed to replace because they didn't fit properly. So, I've been working on mounting the bar, making sure the gears were properly in place, and also tightening the nuts and bolts, ensuring everything was perfectly aligned and secured to avoid any issues or misalignment in the future. It's been a meticulous process, as each piece needs to fit precisely to ensure the proper functioning of the system.

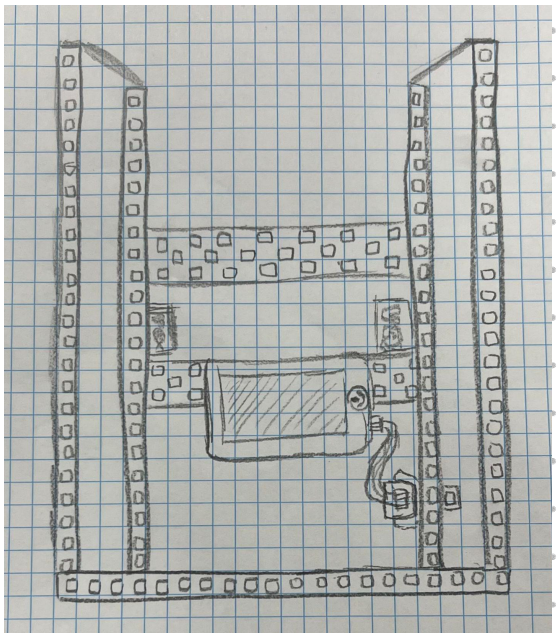
Marc Bigorra: Today Marc Quiñones, Alvaro and I, assembled the Climber, and we made some important changes to improve its performance. We replaced the gears with stronger ones because the previous gears kept coming off after impacts, which caused the robot to disassemble. This was a major issue, as it prevented the robot from functioning properly during operation. Additionally, we rearranged the position of the bars, as they didn't fit well between each other before. By adjusting them, we made sure everything aligned properly, which should make the robot more stable and reliable in the future.

DAY 14 - 27/11/2024

(the teachers have been giving us a refresher class on programming so we haven't been able to make progress on the robot).

DAY 15 - 02/12/2024

Marti Quera: Álvaro, Gabriel and I were working on assembling Climber. We also spent time brainstorming and discussing how to integrate the brain and the battery into the robot. We carefully considered the best way to position the brain would be in the back side center and the battery on the back-right side, ensuring they would fit properly and function efficiently within the robot's structure. We did a small sketch to represent it.



Marc Ruiz: Marc Bigorra, Marta Heredia, and I have been working on assembling Picker. During the process, we noticed an issue with the nuts we were using. Initially, we had placed them in a 'tooth-like' configuration, but they didn’t hold securely enough. After considering different options, we decided to switch to nylon nuts, which provide a much stronger and more reliable hold.

Ramiro De La Hoz: He wasn’t here/he hasn’t done anything.

Alvaro Exposito: Martí, Gabriel and I were working on assembling Climber. We also spent time brainstorming and discussing how to integrate the brain and the battery into the robot. We carefully considered the best way to position the brain would be in the center and the battery on the right side center, ensuring they would fit properly and function efficiently within the robot's structure. We did a small sketch to represent it.

Julen Bosch: He wasn’t here/he hasn’t done anything.

Marc Quiñones: Today I have been assembling Climber together with Álvaro, Ariel and I watched videos about some new robots to get ideas for our robot that can work on it.

Marta Heredia: Marc Ruiz, Marc Bigorra, and I have been working on assembling Picker. During the process, we noticed an issue with the nuts we were using. Initially, we had placed them in a 'tooth-like' configuration, but they didn’t hold securely enough. After considering different options, we decided to switch to nylon nuts, which provide a much stronger and more reliable hold.

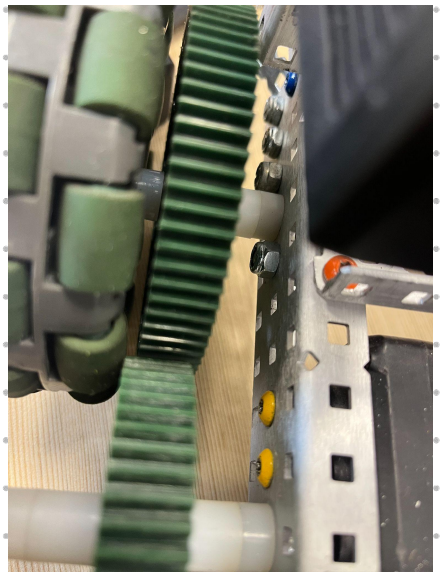
Gabriel Luque: Álvaro, Martí and I were working on assembling Climber. We also spent time brainstorming and discussing how to integrate the brain and the battery into the robot. We carefully considered the best way to position the brain would be in the center and the battery on the right side center, ensuring they would fit properly and function efficiently within the robot's structure. We did a small sketch to represent it.

Marc Bigorra: Marc Ruiz, Marta Heredia, and I have been working on assembling Picker. During the process, we noticed an issue with the nuts we were using. Initially, we had placed them in a 'tooth-like' configuration, but they didn’t hold securely enough. After considering different options, we decided to switch to nylon nuts, which provide a much stronger and more reliable hold.

Ariel Miranda: I have made the code for the robot to go forward, backward, right and left and in the design I have cut the bar to update to the new base. In addition, I have helped look for parts for the elevator of Climber.

```
while (true) {
  if (Controller1.ButtonUp.pressing()) {
    Motor1.spin(forward);
  }
  else if (Controller1.ButtonDown.pressing()) {
    Motor1.spin(reverse);
  }
  else if (Controller1.ButtonLeft.pressing()) {
    Motor1.spin(forward);
  }
  else if (Controller1.ButtonRight.pressing()) {
    Motor1.spin(reverse);
  }
  else {
    Motor1.stop();  // Detener el motor si no se presiona ningún botón
  }

  // Añadir un pequeño retraso para evitar saturar el CPU
  wait(20, msec);
 }
}
```



DAY 16 - 04/12/2024

Marti Quera: Today Gabriel and I have been organizing the group so that everyone has something to do and they have been designing the part of Picker to remove the donuts that are already placed in our robot to be able to remove them and be able to score.

Marc Ruiz: During this lesson Marta, Ramiro and I have been assembling the added part of the collector.

Ramiro De La Hoz: During this lesson Marta, Marc Ruiz and I have been assembling the added part of the collector.

Alvaro Exposito: Today Ariel, Marc Quiñones, Julen and I have been assembling basic parts of Picker. We basically have been doing some adjustments because we didn't have an idea of what to do first. We organised the group so in the next few days we'll know better what to do.

Julen Bosch: Today Álvaro, Marc Quiñones, Ariel and I have been assembling basic parts of Picker. We basically have been doing some adjustments because we didn't have an idea of what to do first. We organised the group so in the next few days we'll know better what to do.

Marc Quiñones: Today Álvaro, Ariel, Julen and I have been assembling basic parts of Picker. We basically have been doing some adjustments because we didn't have an idea of what to do first. We organised the group so in the next few days we'll know better what to do.

Marta Heredia: During this lesson Ramiro, Marc Ruiz and I have been assembling the added part of the collector.

Gabriel Luque: Today Marti and I have been organizing the group so that everyone has something to do and they have been designing the part of Picker to remove the donuts that are already placed in our robot to be able to remove them and be able to score.

Marc Bigorra: Today I have been reviewing all the days of the engineering notebook to be able to structure it well and to be able to put in each one what I have done each day.

Ariel Miranda: Today Álvaro, Marc Quiñones, Julen and I have been assembling basic parts of Picker. We basically have been doing some adjustments because we didn't have an idea of what to do first. We organised the group so in the next few days we'll know better what to do.

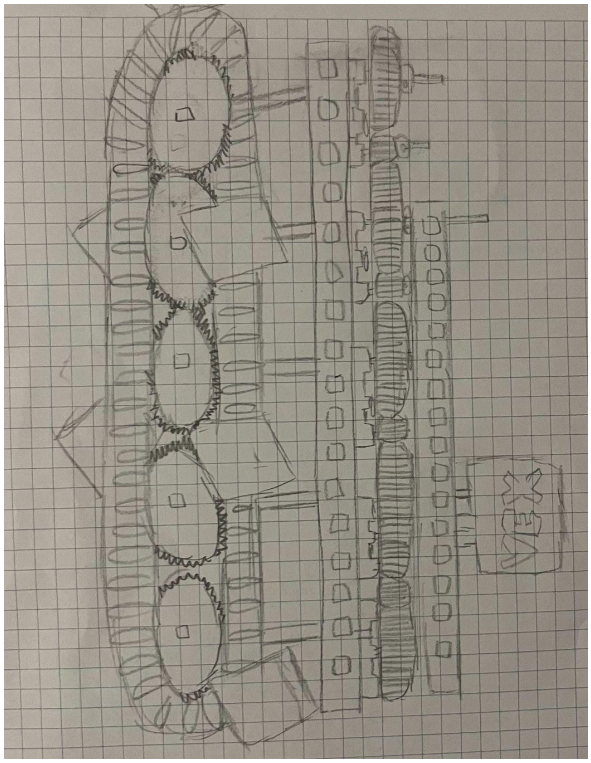
DAY 17 - 09/12/2024

Marti Quera: I took charge of organizing and coordinating all the tasks to ensure everything ran smoothly and well. Additionally, I was actively involved in assembling the robot, handling both the technical and logistical aspects of the process.

Marc Ruiz: Marta, Ramiro and I assembled Picker, ensuring that all its components are put together accurately and efficiently. In addition to this, we successfully completed the construction of the collector, fine-tuning its design to ensure it functions as intended.

Ramiro De La Hoz: Marta, Marc Ruiz and I assembled Picker, ensuring that all its components are put together accurately and efficiently. In addition to this, we successfully completed the construction of the collector, fine-tuning its design to ensure it functions as intended.

Alvaro Exposito: Ariel and I have been looking on the internet at robots created by other teams for the upcoming competition to see how they were taking off the donuts from the stake and identified features that could be useful for our robots. We did a sketch of what could be the system that takes off the donuts.



Julen Bosch: Marc Bigorra, Marc Quiñones and I, contributed to the assembly of Climber, working on tasks that we had to change. One of my responsibilities included cutting metal bars to the required sizes, ensuring they fit perfectly into the design. This process involved careful measurement and handling to guarantee the structural integrity of the robot.

Marc Quiñones: Marc Bigorra, Julen and I, contributed to the assembly of Climber, working on tasks that we had to change. Then I helped cut the bars with Julen because we had to make them smaller.

Marta Heredia: Marc Ruiz, Ramiro and I assembled Picker, ensuring that all its components are put together accurately and efficiently. In addition to this, we successfully completed the construction of the collector, fine-tuning its design to ensure it functions as intended.

Gabriel Luque: He wasn't here/he hasn't done anything.

Marc Bigorra: Marc Quiñones, Julen and I, contributed to the assembly of Climber, working on tasks that we had to change.

Ariel Miranda: Alvaro and I have been looking on the internet at robots created by other teams for the upcoming competition to see how they were taking off the donuts from the stake and identified features that could be useful for our robots. We did a sketch of what could be the system that takes off the donuts.

DAY 18 - 11/12/2024

Marti Quera: Today Gabriel and I have been organizing the group so that everyone has something to do. We have been deciding how to make and assemble the donut extractor while maintaining the light weight but making it efficient.

Marc Ruiz: Today Ramiro, Marta and I have been thinking about how to put the donut collector in the Picker to increase the efficiency since it collects very well but when it comes to leaving the donut inside the stick, it doesn't do it in the way we would like. So we moved the shaft up two holes.

Ramiro De La Hoz: Today Marc Ruiz, Marta and I have been thinking about how to put the donut collector in the Picker to increase the efficiency since it collects very well but when it comes to leaving the donut inside the stick, it doesn't do it in the way we would like. So we moved the shaft up two holes.

Alvaro Exposito: Today, I've been working on the graphic representation of how we envision the final design for Climber. I started by analyzing every detail of the drawing: the proportions, the main shapes, and those small elements that give the robot its personality, such as the joints and panels. Then I started working on the design.

Julen Bosch: Marc Quiñones and I have been dedicating time to perfecting Climber. To achieve this, we've been reworking the bars and refining the mechanism that lifts the donuts. The goal has been to ensure it functions smoothly while also making it possible to remove the donuts cleanly from the stick. It's been challenging but rewarding to see how the adjustments bring us closer to the original concept.

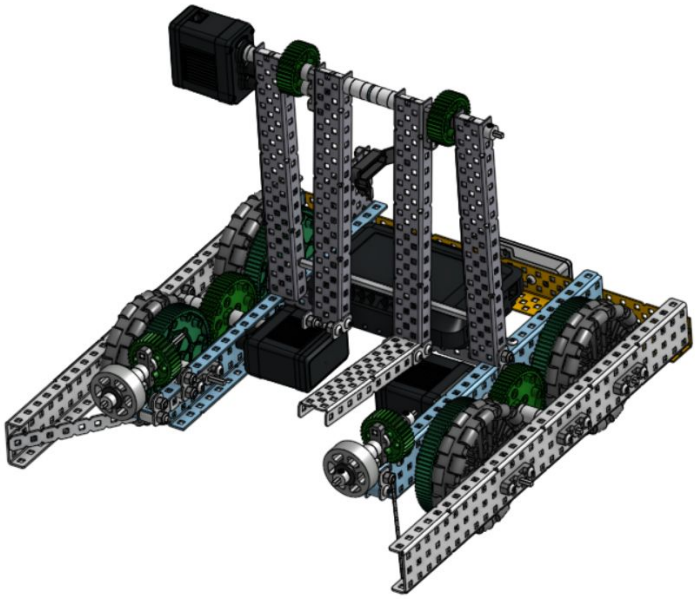
Marc Quiñones: Julen and I have been assembling some parts of the Climber so that it matches Alvaro's drawing. To achieve this, we've been reworking the bars and refining the mechanism that lifts the donuts. The goal has been to ensure it functions smoothly while also making it possible to remove the donuts cleanly from the stick. It's been challenging but rewarding to see how the adjustments bring us closer to the original concept.

Marta Heredia: Today Marc Ruiz, Ramiro and I have been thinking about how to put the donut collector in the Picker to increase the efficiency since it collects very well but when it comes to leaving the donut inside the stick, it doesn't do it in the way we would like. So we moved the shaft up two holes.

Gabriel Luque: I have been designing the donut collection mechanism for Climber, focusing on creating a system that is both efficient and seamlessly integrated into the robot's overall functionality. His work has been essential in ensuring that the mechanism operates smoothly and aligns with the project's design goals.

Marc Bigorra: I've been helping with decisions on Climber to figure out how we could prevent it from hitting the limit we set at the end of the bar. Additionally, I've been working on the engineering notebook, organizing everything, filling in the details, and ensuring it's all properly documented.

Ariel Miranda: I have been working on designing Climber, focusing on creating a model that embodies both functionality and the original concept. I've been working on the elevator part on the Climber.



DAY 19 - 16/12/2024

Marti Quera: I took on the responsibility of organizing the tasks for the group, ensuring that everyone understood their roles and what needed to be accomplished. Beyond that, I collaborated with Gabriel, Marc Quiñones, and Alvaro to build and assemble a set of bars. These bars have a specific purpose: they are designed to efficiently collect the donuts, which will help us streamline the process and achieve our goals more effectively. It was a productive and team-oriented effort, and I am glad we could contribute to the project in this way.

Marc Ruiz: Today, Marta, Julen and I have been redesigning an important part of the Picker to hold the stake to put the donuts, we've also been disassembling this part in real life.

Ramiro De La Hoz: He wasn't here/he hasn't done anything.

Alvaro Exposito: He wasn't here/he hasn't done anything.

Julen Bosch: Today, Marta, Marc Ruiz and I have been redesigning an important part of the Picker to hold the stake to put the donuts, we've also been disassembling this part in real life.

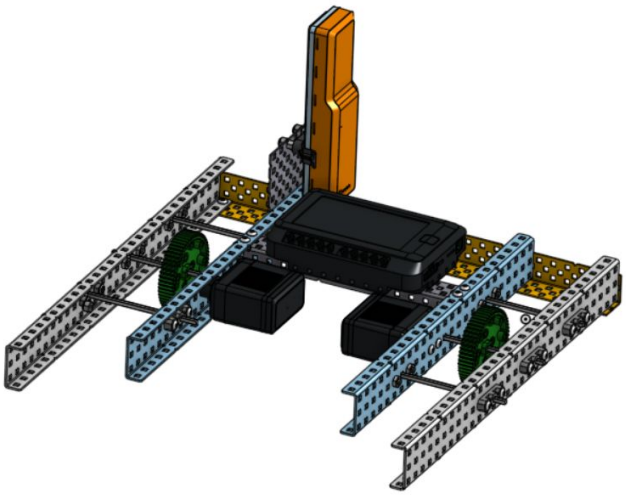
Marc Quiñones: During this lesson, Marc Quiñones and I have been designing some parts of the Climber, especially reinforcing the donuts stealer to make it stronger and resistant.

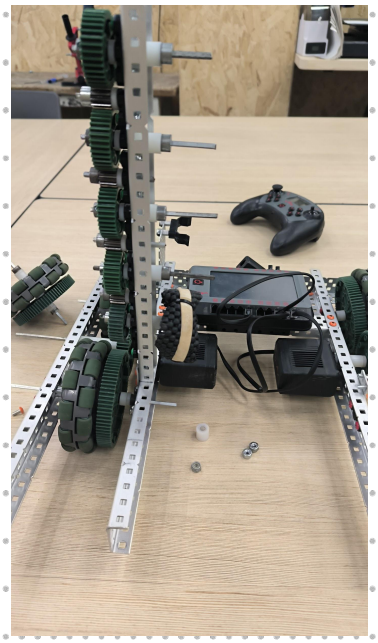
Marta Heredia: Today, Julen, Marc Ruiz and I have been redesigning an important part of the Picker to hold the stake to put the donuts, we've also been disassembling this part in real life.

Gabriel Luque: During this lesson, Marc Quiñones and I have been designing some parts of the Climber, especially reinforcing the donuts stealer to make it stronger and resistant.

Marc Bigorra: I've been helping Ariel on assembling the bars to steal the donuts.

Ariel Miranda: I have assembled the bars on Climber to steal the donuts and I have designed the robot more updating although it is still possible to finish the one that is physically there.





DAY 20 - 08/01/2025

Marti Quera: Today, we just came back from vacation, our teachers Pejan and Maikel have explained a few things about the competition and the final robot assignments. Then we started organizing what we will be doing during the rest of this month, starting polishing booth designs and assemblings adjustments.

Marc Ruiz: After Pejan and Maikel explained a few things about the competition and the final robot assignments, Marta, Gabriel and I have been polishing the Picker design and assembling some screws and nuts.

Ramiro De La Hoz: He wasn't here/he hasn't done anything**.**

Alvaro Exposito: After Pejan and Maikel explained a few things about the competition and the final robot, Alvaro and I have been redesigning some parts of the Engineering Notebook to make it more clear to read it.

Julen Bosch: He wasn't here/he hasn't done anything**.**

Marc Quiñones: After Pejan and Maikel explained a few things about the competition and the final robot assignments, me and Alvaro have been redesigning some parts of the Engineering Notebook to make it more clear to read.

Marta Heredia: After Pejan and Maikel explained a few things about the competition and the final robot assignments, Marc Ruiz, Gabriel and I have been polishing the Picker design and assembling some screws and nuts.

Gabriel Luque: After Pejan and Maikel explained a few things about the competition and the final robot assignments, Marta, Marc Ruiz and I have been polishing the Picker design and assembling some screws and nuts.

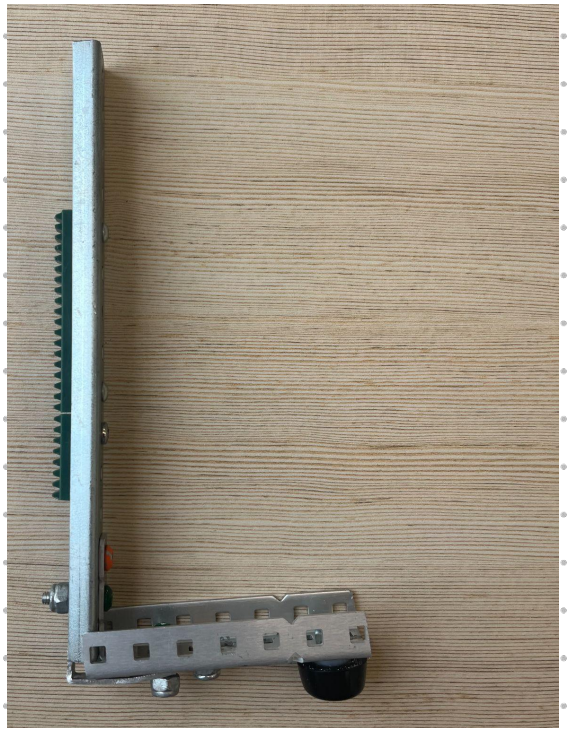
Marc Bigorra: After Pejan and Maikel explained a few things about the competition and the final robot assignments, I've been helping Ariel on doing some adjustments to the Climber, such as spacements on some bars.

Ariel Miranda: After Pejan and Maikel explained a few things about the competition and the final robot assignments, I've been assembling some parts of the robot such as the donut stealer spacers.

DAY 21 - 13/01/2025

Marti Quera: During this lesson I've been organising the group and making sure everyone does something, then Marc Quiñones and I started fixing and completing the Engineering Notebook.

Marc Ruiz: During this lesson, Marta, Gabriel and I have been working on finishing the design together on the Picker, we've sketched and assembled the part of the robot that will hold the stake.



Ramiro De La Hoz: He wasn't here/he hasn't done anything.

Alvaro Exposito: Today, Ariel, Marc Bigorra and I have been starting to assemble the elevator part on the Climber. We have divided this small "team" so each of us does a small task.

Julen Bosch: He wasn't here/he hasn't done anything.

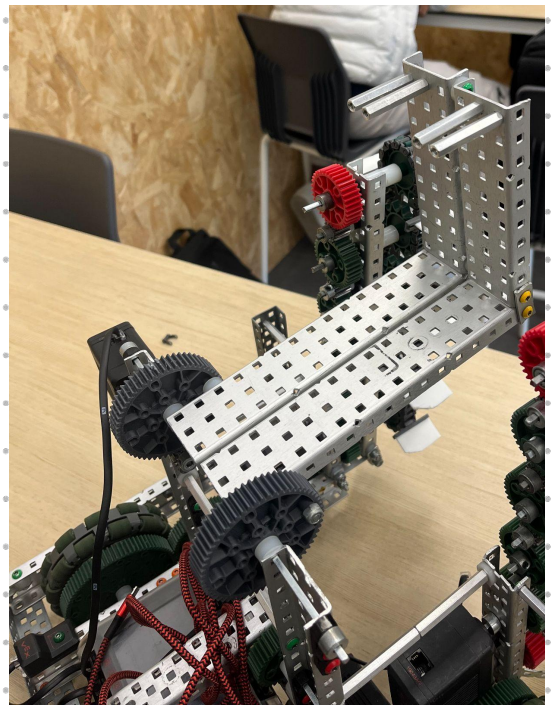
Marc Quiñones: I've been doing the Engineering Notebook with Martí, we've been fixing and completing the Engineering Notebook.

Marta Heredia: During this lesson, Marc Ruiz, Gabriel and I have been working on finishing the design together with the Picker, we've assembled the part of the robot that will hold the stake.

Gabriel Luque: During this lesson, Marta, Marc Ruiz and I have been working on finishing the design together with the Picker, we've assembled the part of the robot that will hold the stake.

Marc Bigorra: Today, Ariel, Alvaro and I have been starting to assemble the elevator part on the Climber. We have divided this small "team" so each of us does a small task.

Ariel Miranda: Today, Alvaro, Marc Bigorra and I have assembled the elevator arm on the Climber. We have divided this small "team" so each of us does a small task.



DAY 22 - 27/01/2025

Marti Quera: Today, at first I started organizing the group to make sure everyone does something. On Climber, we started to design a system to hold the stakes and on the other hand, with Picker we thought about putting some bars to help the robot hold the stake.

Ramiro De La Hoz: He wasn't here/he hasn't done anything.

Alvaro Exposito: Today, Ariel, Marc Bigorra and I have thought about using two bars to help channel the stake into the robot to make it easier to colocate it and hold it.

Julen Bosch: During these two hours, Marc Quiñones, Gabriel and I have been testing the cables and the programming on Picker because we had a problem with the motors, we finally made it work and Picker now works perfectly again.

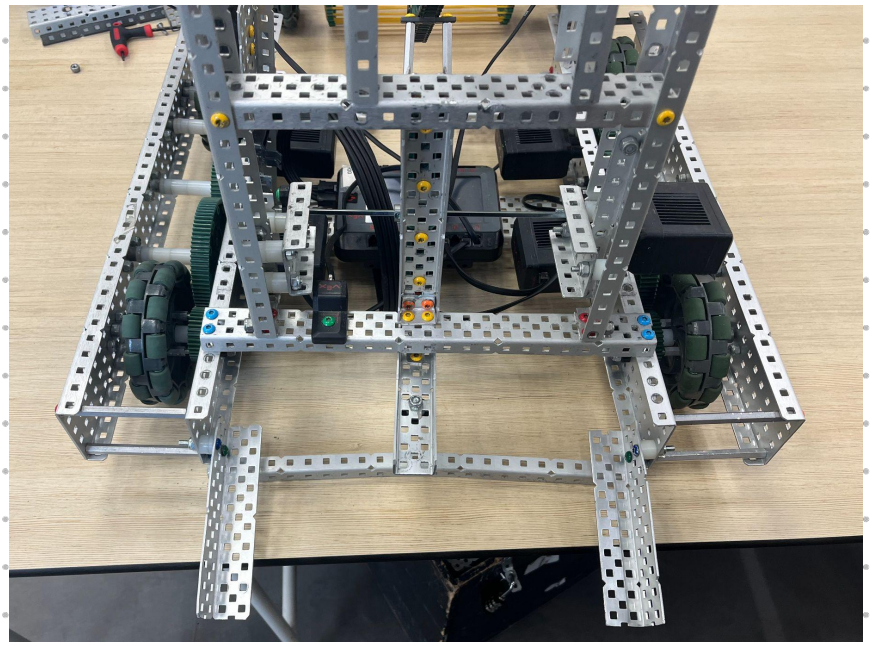
Marc Quiñones: During these two hours, Julen, Gabriel and I have been testing the cables and the programming on Picker because we had a problem with the motors, we finally made it work and Picker now works perfectly again.

Marta Heredia: She wasn't here/he hasn't done anything.

Gabriel Luque: During these two hours, Marc Quiñones, Julen and I have been testing the cables and the programming on Picker because we had a problem with the motors, we finally made it work and Picker now works perfectly again.

Marc Bigorra: Today, Ariel, Alvaro and I have thought about using two bars to help channel the stake into the robot to make it easier to colocate it and hold it.

Ariel Miranda: Today, Alvaro, Marc Bigorra and I have thought about using two bars to help channel the stake into the robot to make it easier to colocate it and hold it.



DAY 23 - 29/01/2025

Marti Quera: During this lesson Ariel and I have been organizing the group to ensure everything gets done. Then Ariel went to help the persons who were with Picker.

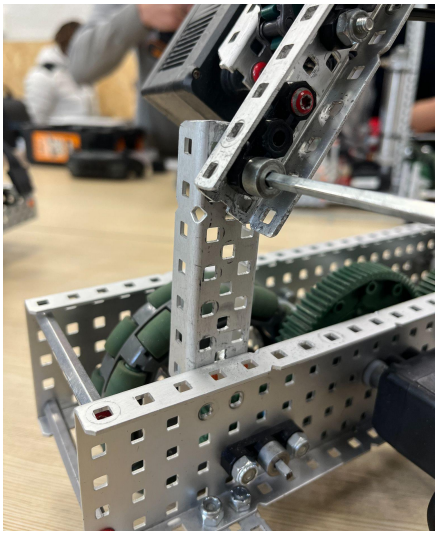
Ramiro De La Hoz: He wasn't here/he hasn't done anything.

Alvaro Exposito: Today it's been a productive day, Marc Bigorra, Marc Quiñones and I have been working on a system to make Climber hold the bases. At first we wanted to put it on the front but we realized there would be no space when, on the field we had the stake inside as well, so we decided to assemble it on the back.

Julen Bosch: During this lesson I've been thinking and starting to design the autonomous maps.

Marc Quiñones: Today it's been a productive day, Marc Bigorra, Alvaro and I have been working on a system to make Climber hold the bases. At first we wanted to put it on the front but we realized there would be no space when, on the field we had the stake inside as well, so we decided to assemble it on the back.

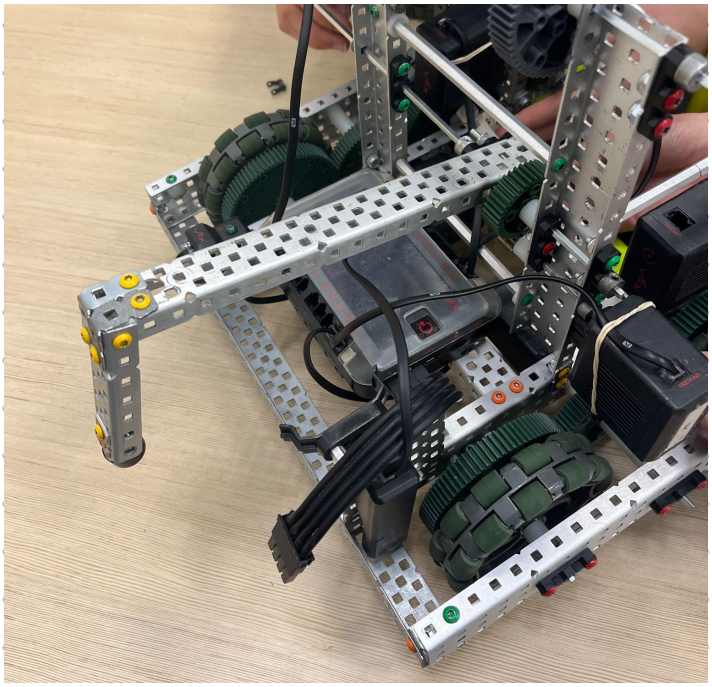
Marta Heredia: I've been redesigning a part of Picker because there was a problem with the front part where the pixels enter. One of the bars that hold this system was "inside" the base, so I've decided to put it on the other side so it doesn't bend.



Gabriel Luque: Today, Ariel saw a small problem there was in the Picker so Marta started to redesign it and Ariel and I unassembled it and assembled it.

Marc Bigorra: Today it's been a productive day, Alvaro, Marc Quiñones and I have been working on a system to make Climber hold the bases. At first we wanted to put it on the front but we realized there would be no space when, on the field we had the stake inside as well, so we decided to assemble it on the back.

Ariel Miranda: Today, I saw a small problem there was in the Picker so Marta started to redesign it and Gabriel Luque and I unassembled it and assembled it. One of the bars that hold this system was "inside" the base, so I've decided to put it on the other side so it doesn't bend.



DAY 24 - 05/02/2025

Marti Quera: Today, as everyday I started organizing the group, I talked to everyone of them to try to see something that can be improved on each robot and then Marc Bigorra and I started completing the Climber design.

Ramiro De La Hoz: He wasn't here/he hasn't done anything.

Alvaro Exposito: He wasn't here/he hasn't done anything.

Julen Bosch: Today, Ariel, Gabriel Luque and I have been trying to see what to improve on Picker and we saw we could use a standoff with a spacer to hold the erasers and wheels system so the chain doesn't have to hold it all by itself. Then we also saw we could put one bar on both sides inside the base to help the chain system to take the donuts.

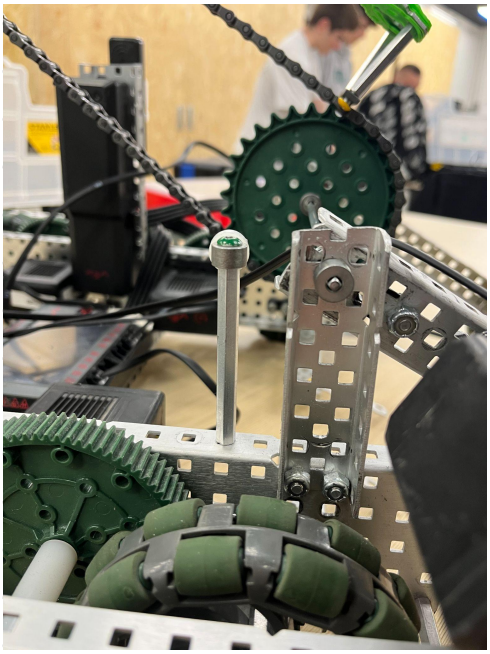
Marc Quiñones: Today, Marc Bigorra and I have been turning the Engineering Notebook clean, trespassing most of the day by day from one document to the Engineering Notebook. We also took some photos and added them.

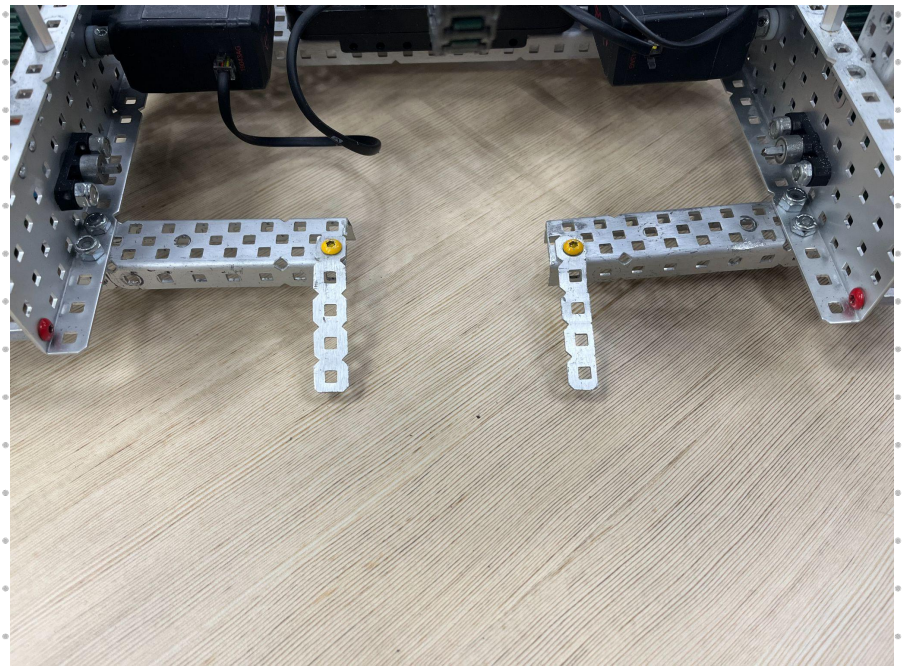
Marta Heredia: He wasn't here/he hasn't done anything.

Gabriel Luque: Today, Ariel, Julen and I have been trying to see what to improve on Picker and we saw we could use a standoff with a spacer to hold the erasers and wheels system so the chain doesn't have to hold it all by itself. Then we also saw we could put one bar on both sides inside the base to help the chain system to take the donuts.

Marc Bigorra: Today, Marc Quiñones and I have been turning the Engineering Notebook clean, trespassing most of the day by day from one document to the Engineering Notebook. We also took some photos and added them.

Ariel Miranda: Today, Julen, Gabriel Luque and I have been trying to see what to improve on Picker and we saw we could use a standoff with a spacer to hold the erasers and wheels system so the chain doesn't have to hold it all by itself. Then we also saw we could put one bar on both sides inside the base to help the chain system to take the donuts.



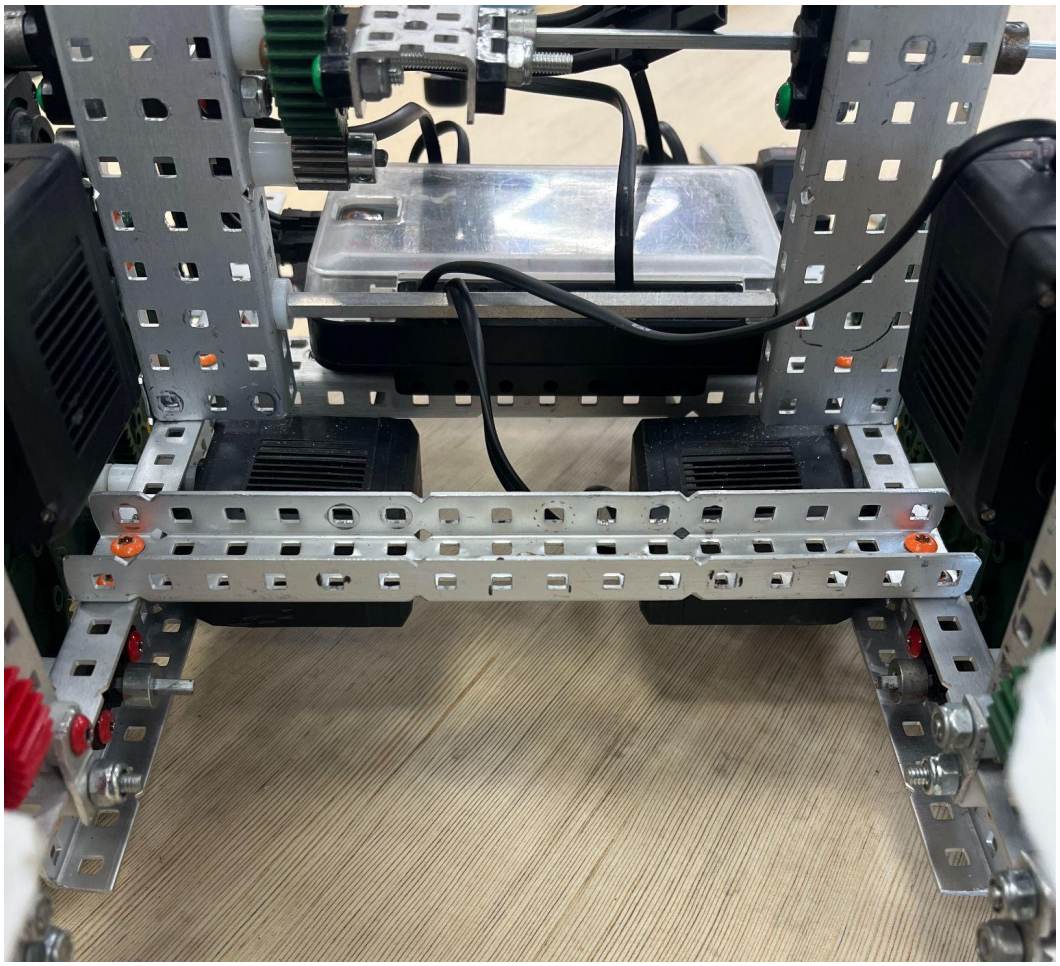


DAY 25 - 10/02/2025

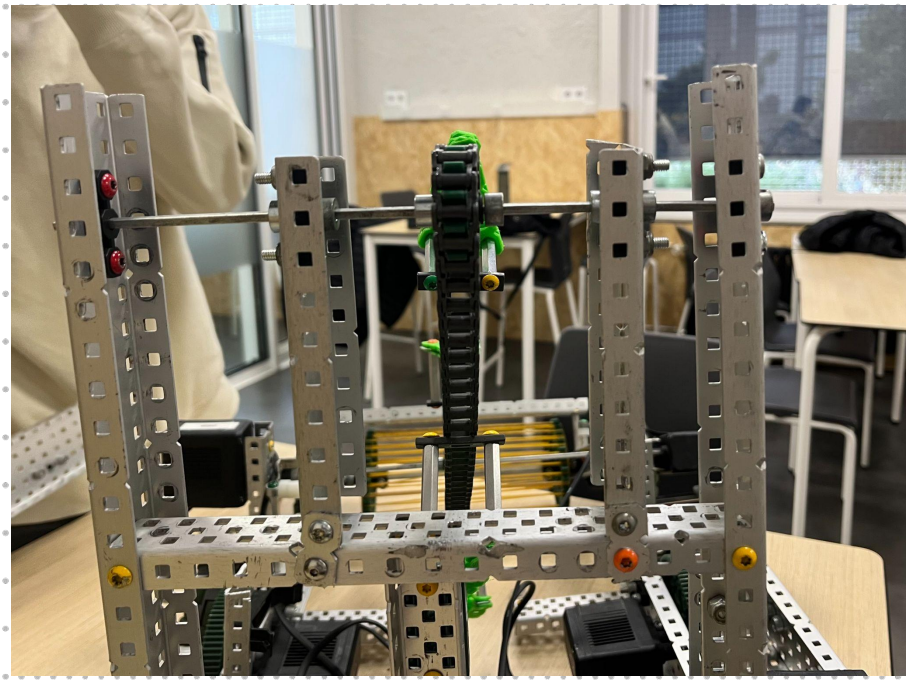
Marti Quera: Today it's been a good day as well. At first, I organised the group and divided them to make sure some of them improved and assembled things on Picker and some others on the Climber. Then I started checking the Engineering Notebook and adding some things on some days, completing the rest of the days missing and adding some importants photos to describe some days.

Ramiro De La Hoz: He wasn't here/he hasn't done anything.

Alvaro Exposito: This lesson it's been quite productive for our group, Ariel and I have seen a problem, the Climber base was leaning in a little so we decided to change some spacers but, this didn't really work so we decided to add a bar in the centre to hold both sides better and lucky, this worked!



Julen Bosch: During these two hours, Marc Quiñones, Marta and I have been making some adjustments to the Picker, we added two bars on the top of the system donut picker to make it stronger. We had some problems with the shaft so we had to put these two bars to help hold them.



Marc Quiñones: During these two hours, Marta, Julen and I have been making some adjustments to the Picker, we added two bars on the top of the system donut picker to make it stronger. We had some problems with the shaft so we had to put these two bars to help hold them.

Marta Heredia: During these two hours, Marc Quiñones, Julen and I have been making some adjustments to the Picker, we added two bars on the top of the system donut picker to make it stronger. We had some problems with the shaft so we had to put these two bars to help hold them.

Gabriel Luque: He wasn't here/he hasn't done anything.

Marc Bigorra: He wasn't here/he hasn't done anything.

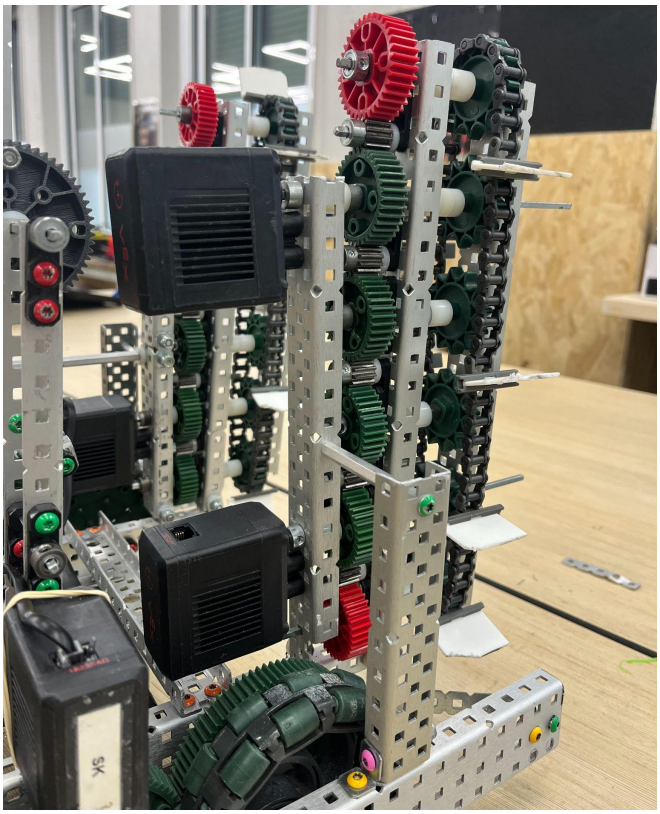
Ariel Miranda: This lesson it's been quite productive for our group, Alvaro and I have seen a problem, the Climber base was leaning in a little so we decided to change some spacers but, this didn't really work so we decided to add a bar in the centre to hold both sides better and lucky, this worked!

DAY 26 - 12/02/2025

Marti Quera: Today, same as Monday, I organised the group and divided them to make sure some of them improved and assembled things on Picker and some others on the Climber. Then kept checking and improving the Engineering Notebook and adding some things on some days, completing the rest of the days missing and adding some sketches and photos to describe some days.

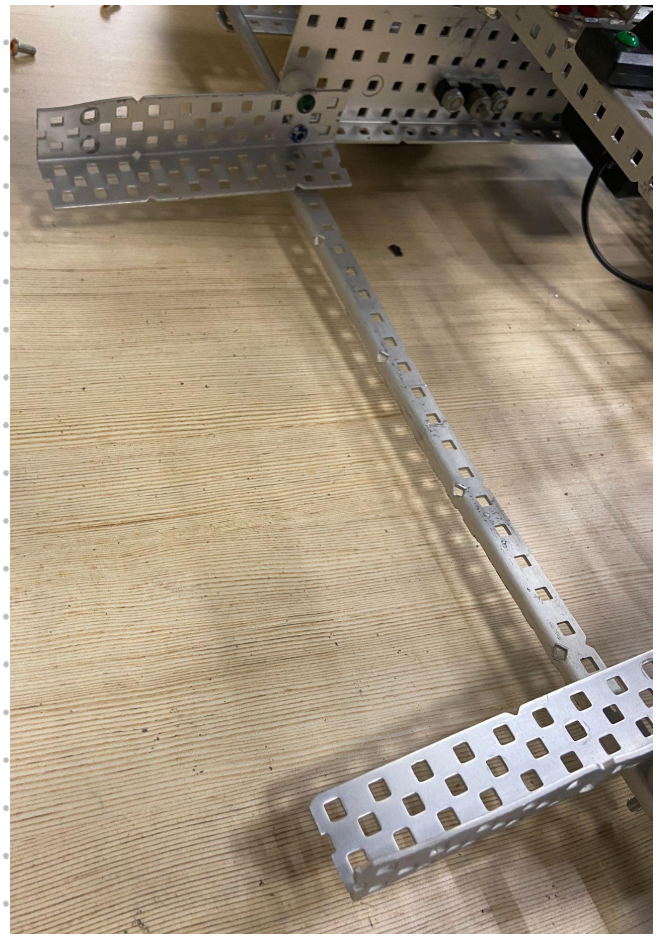
Ramiro De La Hoz: Today at first, I started cleaning our main box and our tools. We don't do this really often and we thought it would be a good idea to do it so it is easier to find things for everyone. Then I helped Marc Quiñones, Julen and Gabriel. They were fixing Picker and were telling me some tools and parts they needed.

Alvaro Exposito: Today Ariel and I started changing a bar on the Climber, Pejan told us we should put a motor on the top of the system donut stealer so we started the process, we had to remove the old one and put a new one. We had one new bar but we needed two so on the other side we added half of one on top of the old one. We will be assembling the motors in the next few days.



Julen Bosch: During this lesson, Marc Quiñones, Gabriel and I have been focusing on Picker. We saw the bar on the back that helped the stake get holded was touching the field so we had to cut it a bit so it doesn't touch it. Then we also had to cut a part of the bar that holds the battery because it was interrupting the battery from being well holded.

Marc Quiñones: During this lesson, Julen, Gabriel and I have been focusing on Picker. We saw the bar on the back that helped the stake get holded was touching the field so we had to cut it a bit so it doesn't touch it. Then we also had to cut a part of the bar that holds the battery because it was interrupting the battery from being well holded.



Marta Heredia: Today I've been completing the design, these days we've been moving on a lot with the robot but not with the design so I had to add some things we've done, such as the two bars on the top of the donut picker system.

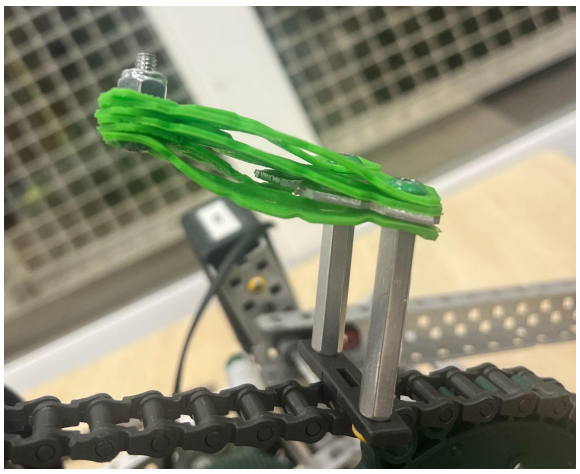
Gabriel Luque: During this lesson, Marc Quiñones, Julen and I have been focusing on Picker. We saw the bar on the back that helped the stake get holded was touching the field so we had to cut it a bit so it doesn't touch it. Then we also had to cut a part of the bar that holds the battery because it was interrupting the battery from being well holded.

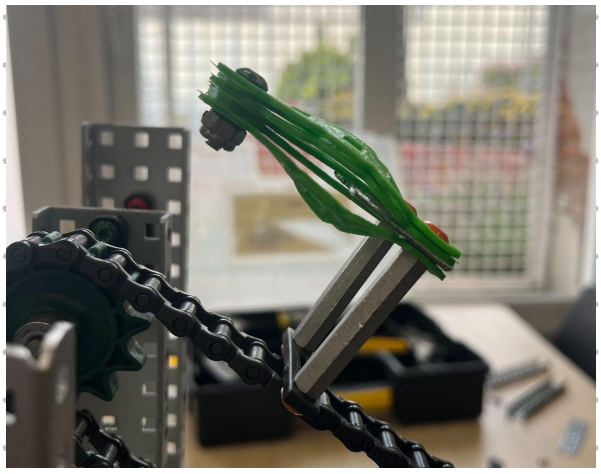
Marc Bigorra: During this lesson, Martí told me I had to do some sketches. Those were for the Engineering Notebook, as we had some days with no pictures at all. Now, we have some descriptions of some days with a representative image to help others understand what we did this day.

Ariel Miranda: Today Alvaro and I started changing a bar on the Climber, Pejan told us we should put a motor on the top of the system donut stealer so we started the process, we had to remove the old one and put a new one. We had one new bar but we needed two so on the other side we added half of one on top of the old one. We will be assembling the motors in the next few days.

DAY 27 - 17/02/2025

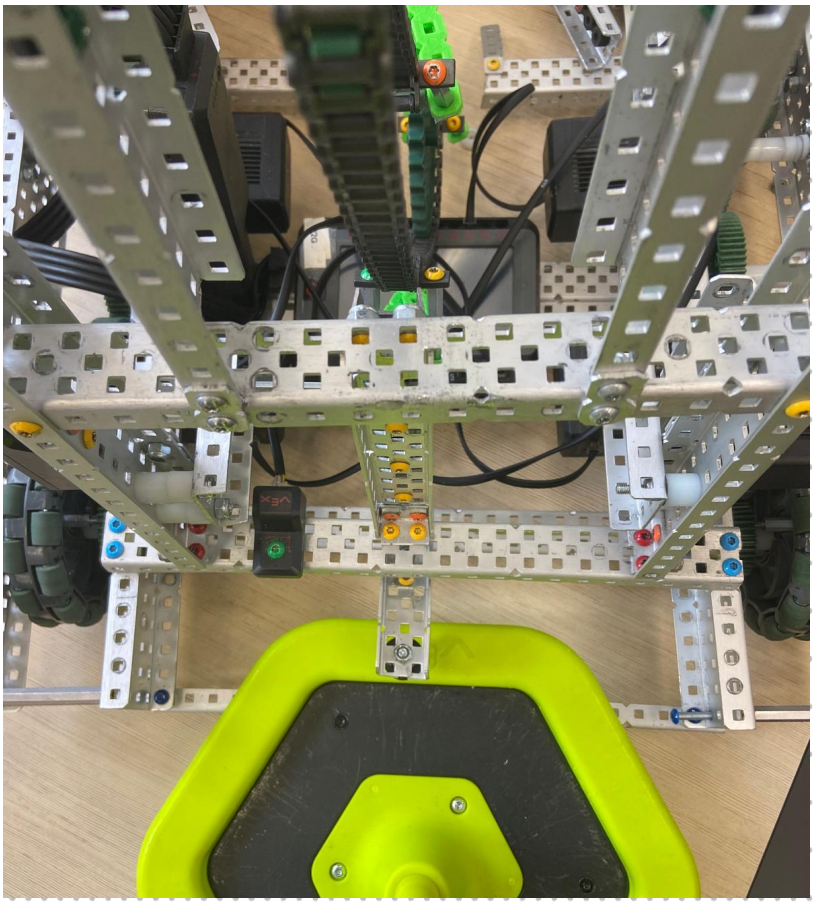
Marti Quera: Today I have been tweaking some things on the Picker. First, we have changed the spacers so that the steak can fit perfectly into the base collector because before the space was too wide, so we have narrowed it and now it fits perfectly. Later we also changed the tweezers that picked up the donuts since before it touched the bar below every time we wanted to place a donut on the stake, so instead of putting the nylon nut facing up, what we have done is put it the other way around and thus it no longer touches the bar.





Ramiro De La Hoz: He wasn't here/he hasn't done anything.

Alvaro Exposito: Today we have been changing the steak Picker with Marta Heredia and Ariel Miranda since in the previous way the steak did not fit completely and at the time the mechanism for collecting the stake did not attach well, making it lack resistance or precision, which meant that the donuts would be impossible to place.



Julen Bosch: Today I've been helping each robot giving them some support on what they were doing, facilitating some tools and parts they needed. We fixed the stake system on the Picker and changed a small part in the gripers that take the donuts.

Marc Quiñones: First, we have changed the spacers so that the steak can fit perfectly into the base collector because before the space was too wide, so we have narrowed it and now it fits perfectly. Later we also changed the tweezers that picked up the donuts since before it touched the bar below every time we wanted to place a donut on the stake, so instead of putting the nylon nut facing up, what we have done is put it the other way around and thus it no longer touches the bar.

Marta Heredia: Today we have been changing the steak picker with Alvaro Exposito and Ariel Miranda since in the previous way the steak did not fit completely and at the time the mechanism for collecting the stake did not attach well, making it lack resistance or precision, which meant that the donuts would be impossible to place.

Gabriel Luque: I have been testing new cables and installing them to the climber robot because the cables were poorly connected and some did not work so I had to crimp new cables so that they all work correctly.

Marc Bigorra: Today I have been making and restructuring the engineering notebook so that every day fits with what we had done and I have also been making drawings to put in the engineering notebook so that it is cleaner and more professional. I was also taking photos for the notebook as well.

Ariel Miranda: Today i have been changing the steak picker with Marta Heredia and Alvaro Exposito since in the previous way the steak did not fit completely and at the time the mechanism for collecting the stake did not attach well, making it lack resistance or precision, which meant that the donuts would be impossible to place.

DAY 28 - 19/02/2025

Marti Quera: Today as everyday I started organising the group, we've decided to assemble a bar on the Picker, this bar is situated below the stake hold system, this bar makes stop the hold system to ensure it holds the base on the best position it can be done. On the other hand, with the Climber we have added a small 1 x 4 steel bar on the climber system because when the robot was trying to climb, one of the bars was bending. This small bar has been putted in both sides to ensure it doesn't bend anymore.

Ramiro De La Hoz: He wasn't here/he hasn't done anything.

Alvaro Exposito: Today Ariel Miranda, Marta Heredia and I were changing the axis of the picker robot since, being very thin, it bends easily, so we have decided to put a more resistant axis so that it cannot bend and there is no problem in the middle of a game of Vex.

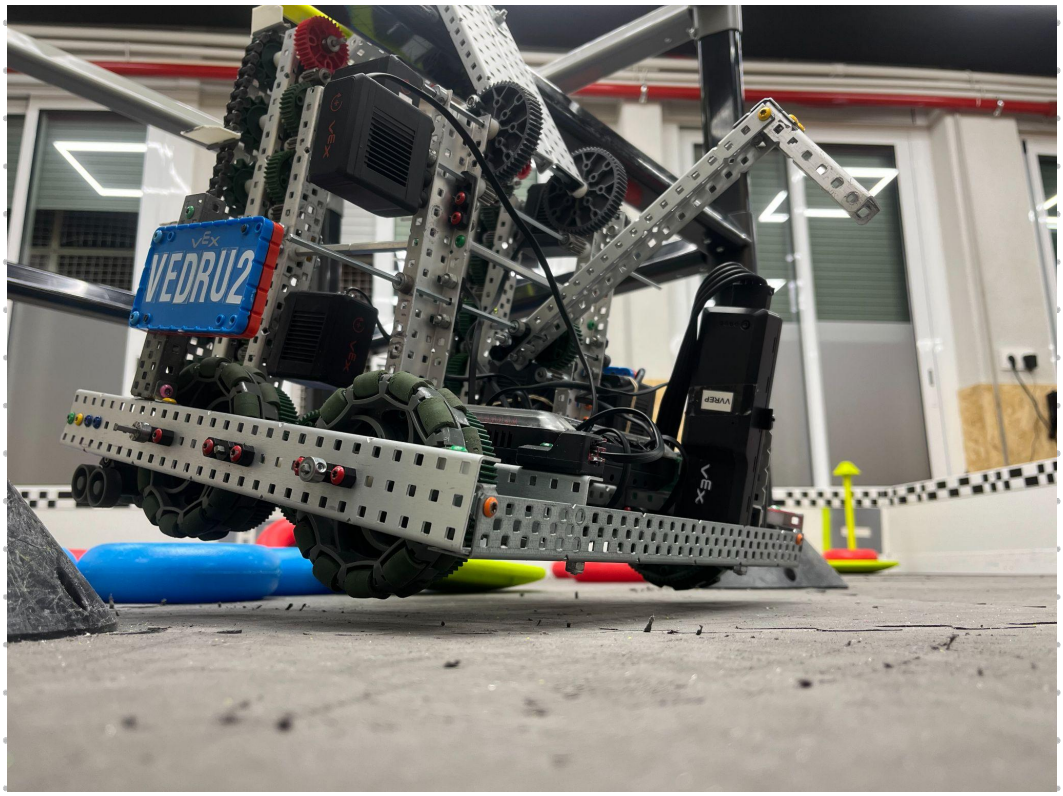
Julen Bosch: He wasn't here/he hasn't done anything.

Marc Quiñones: Today I've been helping Marta Heredia, Alvaro Exposito and Gabriel Luque on the Picker. As we changed the shaft we had to do a bigger hole on the bar because this one was much wider than the older one. I've done the holes on the bars on each side.

Marta Heredia: Today Ariel Miranda, Alvaro Exposito and I were changing the axis of the picker robot since, being very thin, it bends easily, so we have decided to put a more resistant axis so that it cannot bend and there is no problem in the middle of a game of Vex.

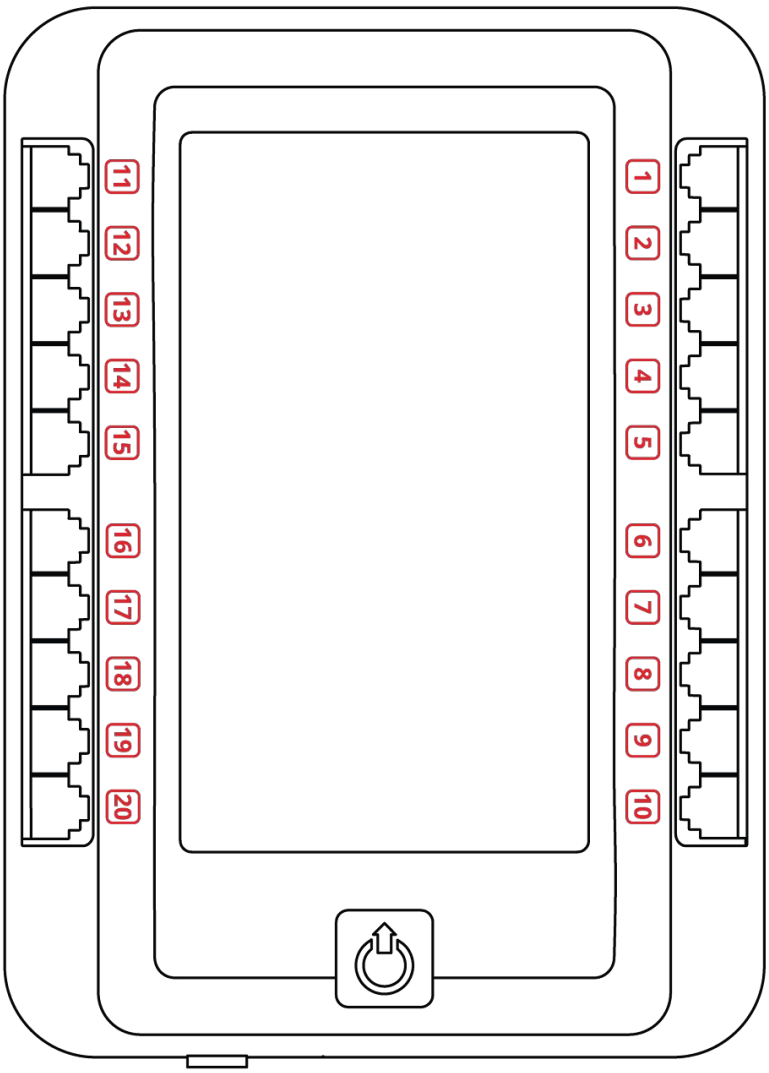
Gabriel Luque: Today Gabriel Luque, Marta Heredia and I were changing the axis of the picker robot since, being very thin, it bends easily, so we have decided to put a more resistant axis so that it cannot bend and there is no problem in the middle of a game of Vex.

Marc Bigorra: I was helping marti quera on the other hand, with the Climber we have added a small 1 x 4 steel bar on the climber system because when the robot was trying to climb, one of the bars was bending. This small bar has been putted in both sides to ensure it doesn't bend anymore. Now the robot is able to hang for his on.



Ariel Miranda: During these hours, we changed many things but my main focus has been on designing a 3D piece. This one was a gear, as we now had a bigger shaft we had to find a gear with a bigger hole but we didn't have one so I had to design it, calculating how wide was the shaft and starting to print it. Then I kept helping the others on changing this big system.

PORT 11
PORT 12
PORT 13
PORT 14
PORT 15
PORT 16
PORT 17
PORT 18
PORT 19
PORT 20



1 PORT
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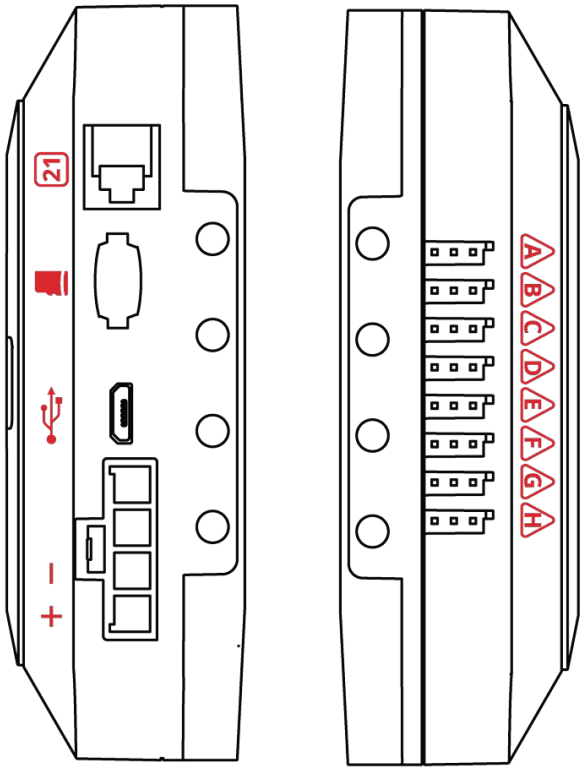
PORT 21



A PORT
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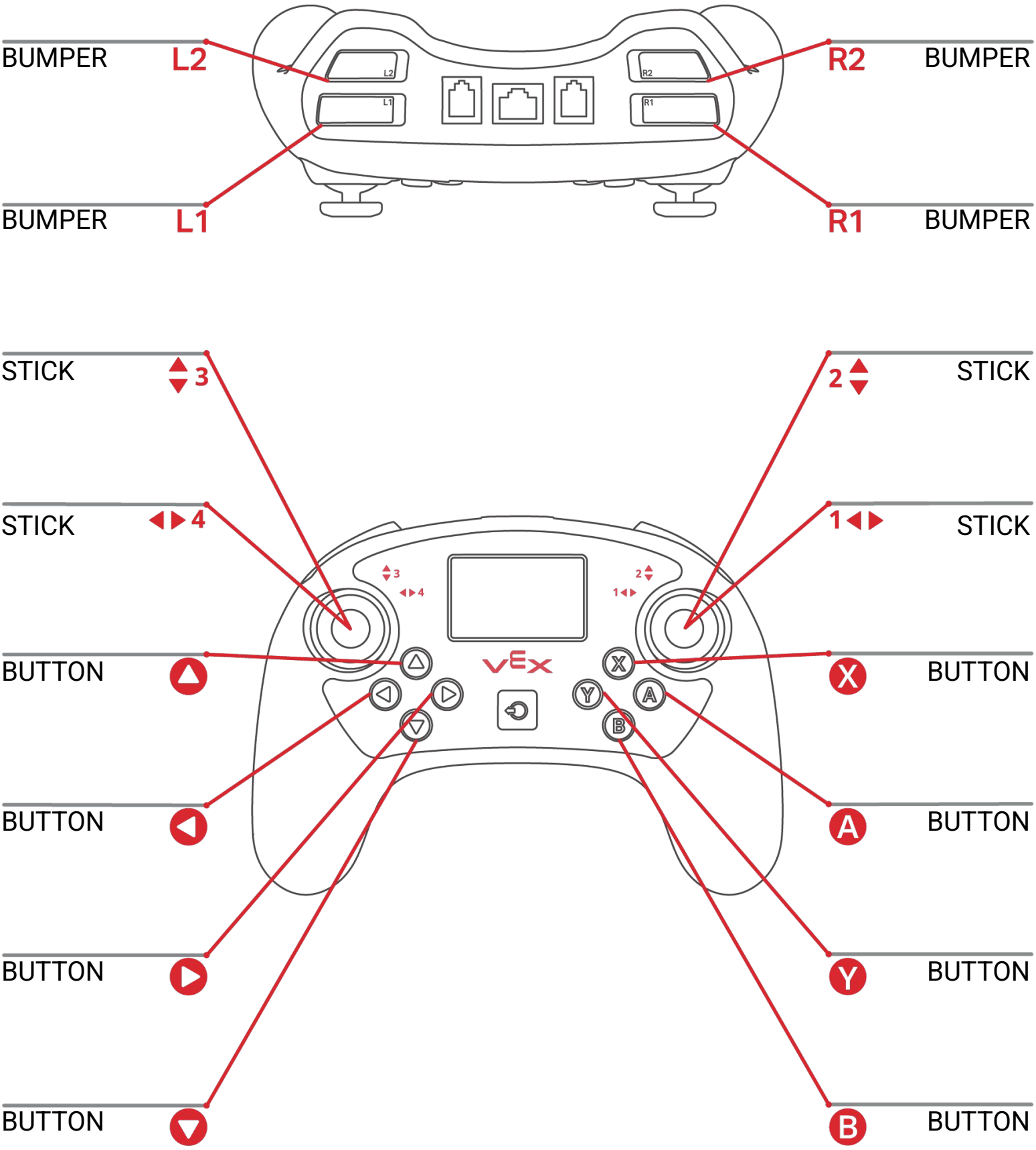
G PORT
H PORT

Project

Name Date Page



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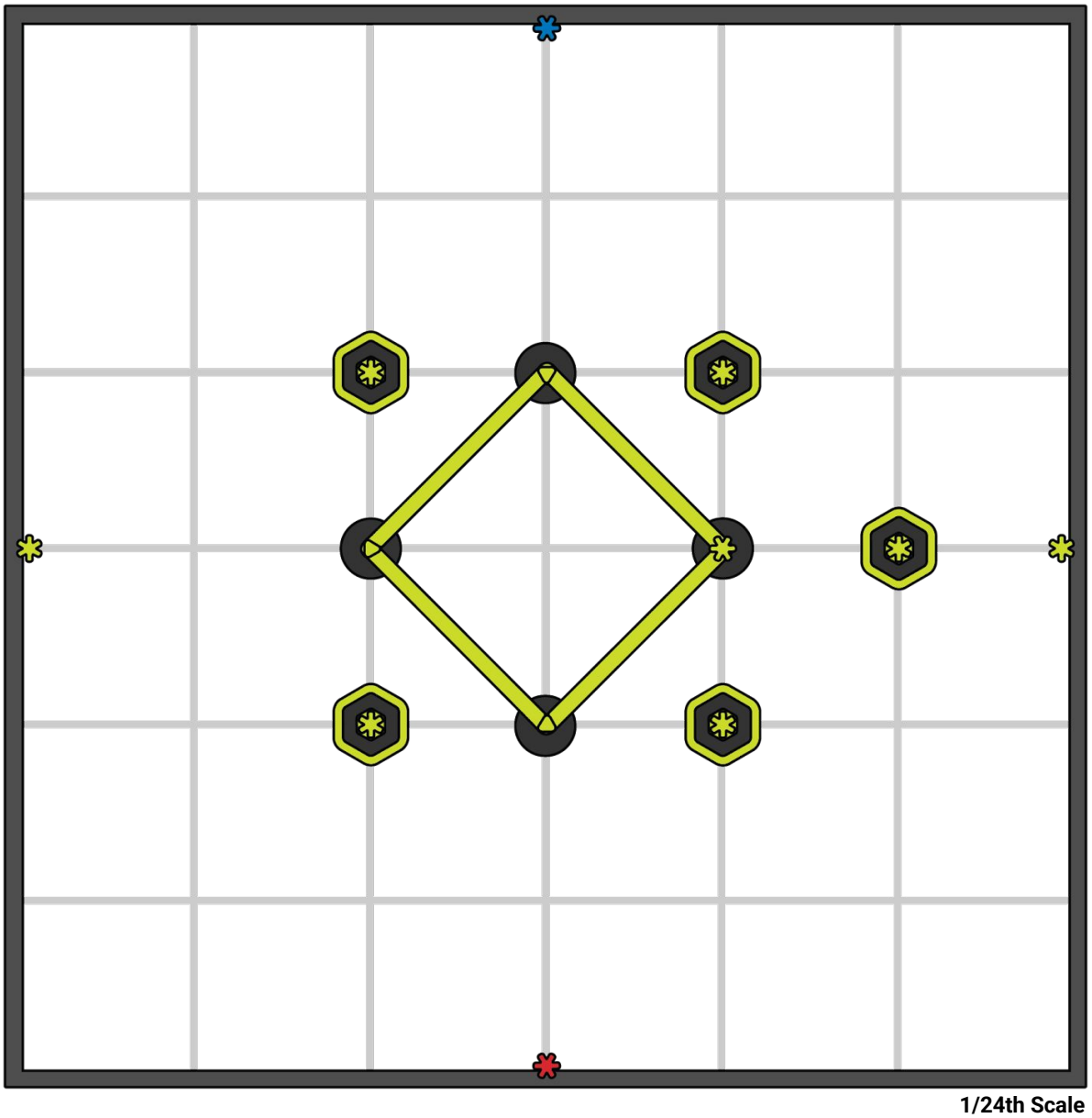
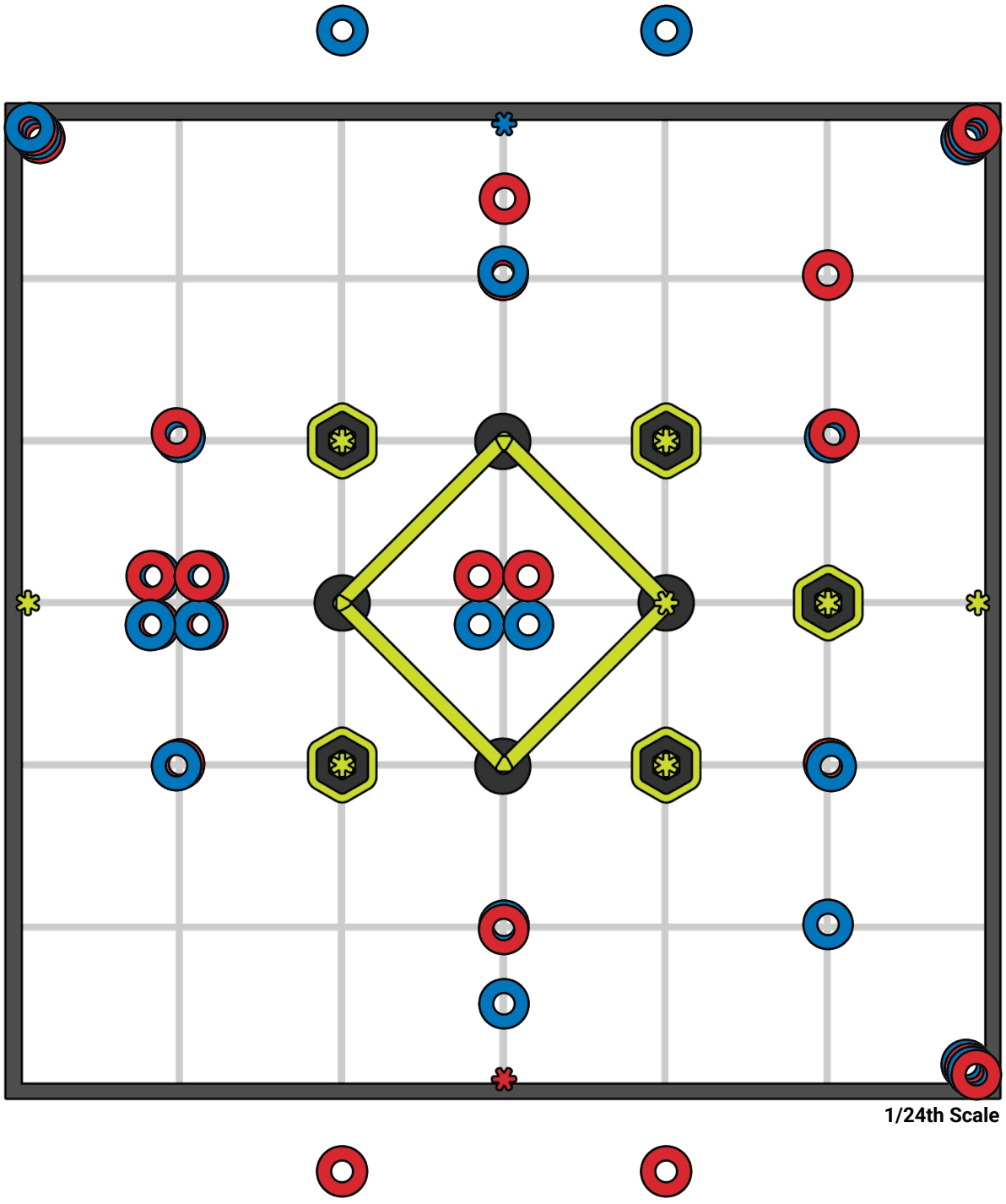


1/24th Scale

Project Blank High Stakes Field

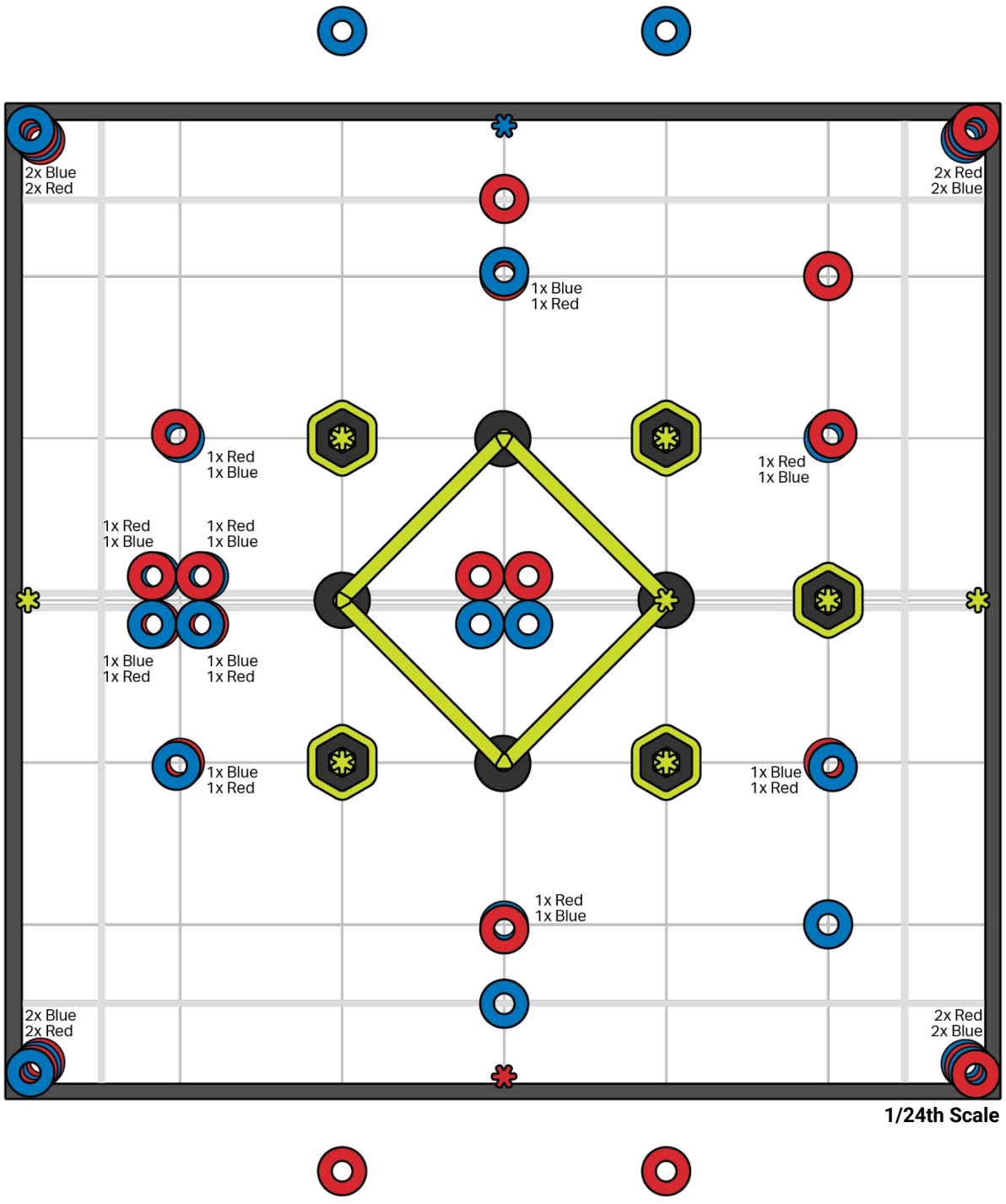
Name Date Page



1/24th Scale

Project “High Stakes” Starting Field with Moveable Game Objects

Name Date Page



1/24th Scale

Project "High Stakes" Starting Field with Frozen Game Objects

Name Date Page