

# MECHALODONS 25625



## SPONSORS

### Robot Level (\$1000+)

- Dimond Robotics/Lynx Initiative
- Leidos
- IBEW Local 1547
- DataFlow Alaska
- Alaska Museum of Science & Nature
- The DEKA Foundation, Bosch, and Jabil Cares Foundation!

### Control System Level (\$501-\$1000)

- VIPER Transitions

### Odometry Level (\$251-\$500)

- Teresa Harwell

### Servo Level (\$1-\$250)

- Alaska Integrative Psychiatry, LLC - Andrea Siegfried, APRN

**MOTTO: “IF IT ISN’T ON FIRE, IT’S PROBABLY FINE.”**

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# Who We Are

<p><b>Anna (7th)</b>  <b>Builder, Driver</b>  <b>Romig Middle School</b></p>	<p><b>Erin (10th)</b>  <b>Team Captain</b>  <b>South High School</b></p>	<p><b>Everyn (7th)</b>  <b>Human Player, Safety Captain,</b>  <b>Driver, Manual Labor, Artist,</b>  <b>Driver, Historian, Electrician,</b>  <b>Frontier Charter School</b></p>
		
<p><b>Hazel (9th)</b>  <b>Builder, Driver</b>  <b>Frontier Charter School</b></p>	<p><b>Indira (7th)</b>  <b>Primary Driver, Main</b>  <b>Programmer</b>  <b>Romig Middle School</b></p>	<p><b>Quentin (7th)</b>  <b>Assistant Team Captain, Team</b>  <b>Editor</b>  <b>Central Middle School</b></p>
		

## What is my favorite piece of equipment and why?

**Hazel - My favorite piece of equipment are zip ties because not only do they make a fun sound when you zip them down, they are an efficient way of managing wires.**

**Erin - My favorite piece of equipment is the drill. Drills allow us to be more efficient and allow us to have enough time to do other tasks.**




**Anna - My favorite piece of equipment is duct tape because it helps us fix broken pieces and also express our creativity through duct taping LEGO pieces down onto our robot.**

**Everyn - My favorite pieces are zip ties and duct tape. Zip ties are so versatile, and since Duct tape is almost illegal, it's a nice, fun way to stretch the rules.**

**Indira - I like utilizing cardboard for the robot build because it creates a very flexible and non-permanent surface to work with so if something goes wrong, the cardboard can always be moved or reshaped to meet the needs.**

**Quentin - My favorite piece of equipment is our robot, it shows our team's accomplishments and unity as a team.**

# Coaches/Mentors

Coach Anna	Coach Heather	Coach Tanya
		

**Coach Anna** – “I am the food coach, and problem solver for the team. Go FTC!” A hard worker who is immensely loved throughout the team. She is always a kind face to talk to while relaxing and eating the snacks she graciously brings us. She is an amazing person who tries her best to help where she can and is genuinely one of the best people ever.

**Coach Heather** - Heather is the technical coach for the FTC team. Heather is also a spectacular worker who always seems to know what she is doing, and is a lovely person to work with and be on a team with. She keeps the team on track with building and puts together the jumbled team ideas. She made all of the team hats and they look amazing! She taught us the process of building the robots and helped us figure out how to fix the many different problems that arose with building the robot.

**Coach Tanya**– The best coach ever!!! We can usually find her hanging outside the lab windows helping our FLL team. She is extremely excited that the FLL team gets to share in all the excitement of FTC and that Dimond Robotics students are learning to be leaders and most of all teachers. Tanya is a wonderful person who somehow manages everything from making sure that we have everything we need to build our robot to helping us prepare for judging. To be honest we have no idea how she does it all.

## Mentors

### Dimond Robotics

A special Thank you to Dimond Robotics for creating a community team.

#### Ψ Lynx 3825

**Avery S (programming)** - Helped us learn how to code and also helped with auto.

**Hunter (build)** - Slides, strategy, fundraising

**Kanna (business)** - Engineering portfolio and business connections

**MJ (build)** - Helped walk us through our very first inspection and is always checking on us and answering our questions

**Avery D (build)** - Hanging out and relaxing he brings the vibes and can answer our questions.

**Luke (build)** - Taught us how to connect the LEGO gear to the servo.



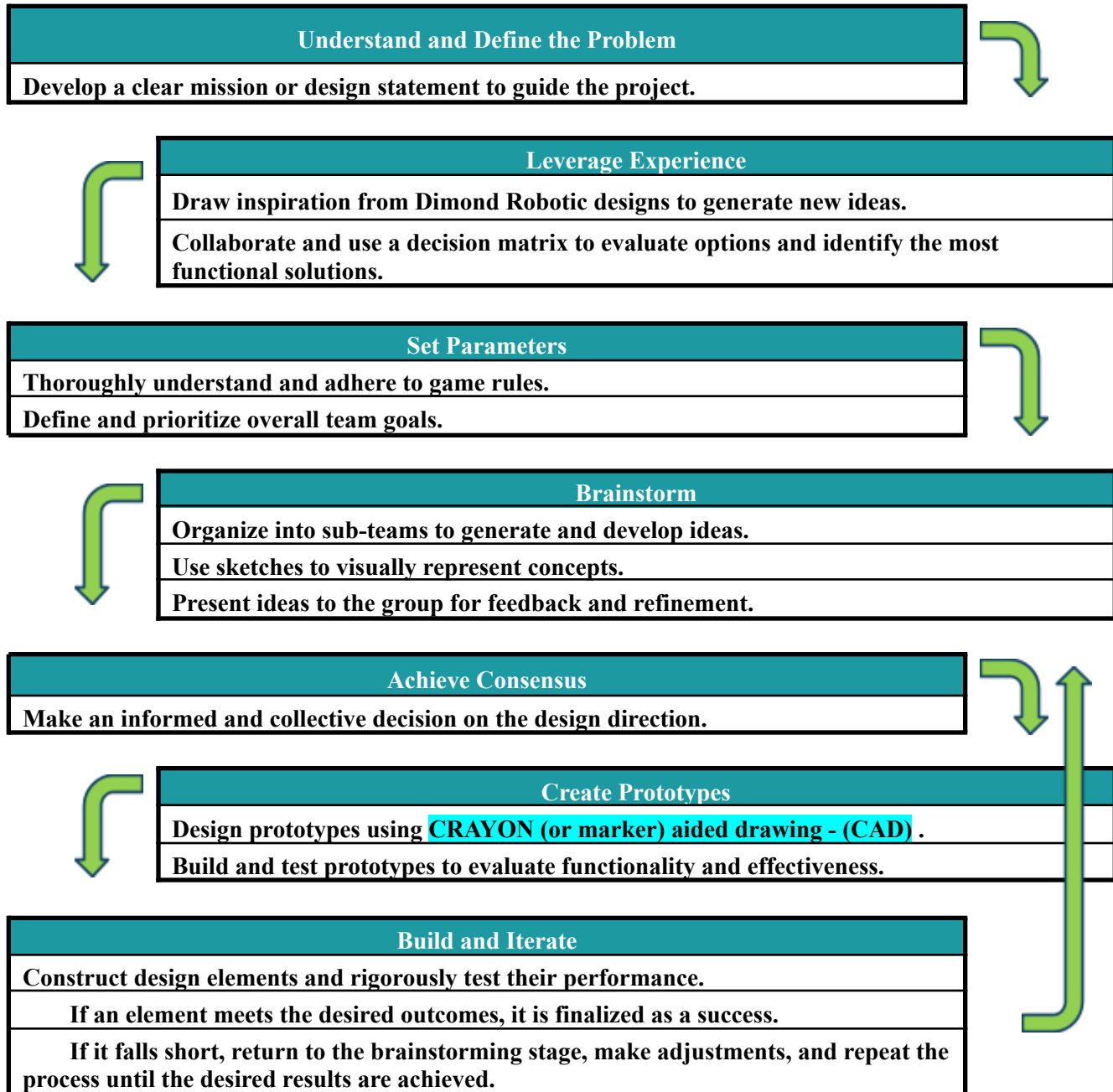
#### Lynx of Legend 3208

**Max (build)** - He helped us prepare for our presentations with the judges so we would know how to properly present our ideas.



# The Build

## Mechalodon Engineering Process



*Engineering Process provided by 3825 Ψ Lynx*

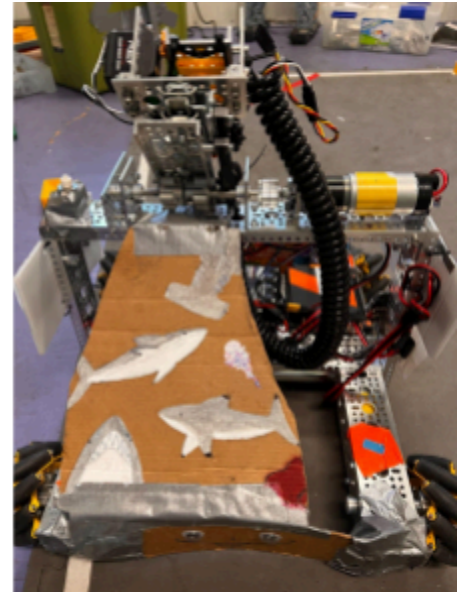
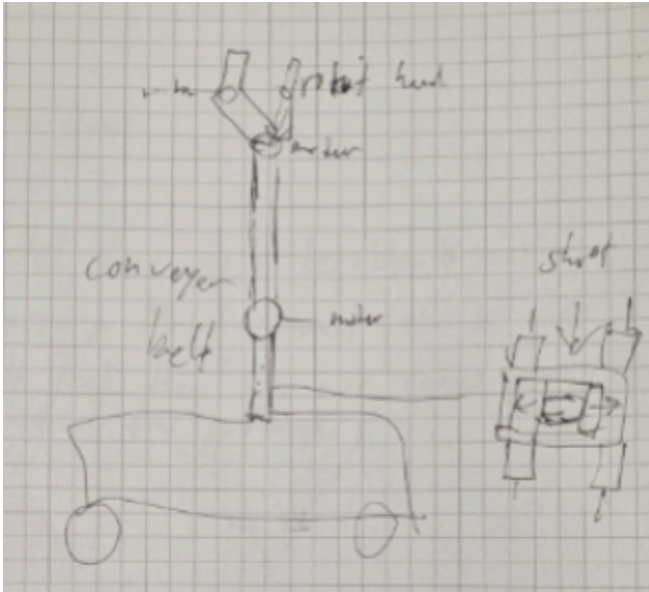


# Meet Shark Bait

We have never built a robot before. We knew we wanted a robot that had a simple design and could reach the high basket and score points and not have anything catch on fire. We needed to limit our risks so that we can fix things as we go. When we got to our very first competition, it was amazing. We did way better than we expected to. We miraculously got our claw to start working, and we managed to score with it even though we originally thought we couldn't, due to a minor malfunction.

Parameters: 18 inches square and a max extension of 42 inches.

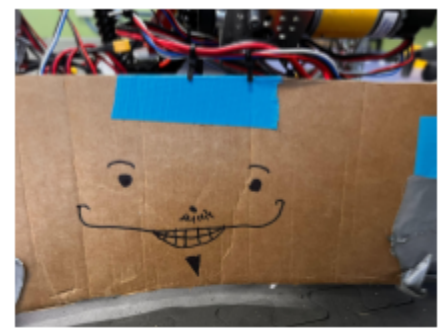
We do not currently have CAD software at the museum but we do have crayons, pens, and paper so we drew our designs by hand.



*Lucretia Anthrax Watergate the 25th*



*Chet*

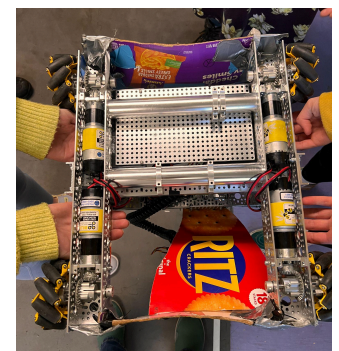


*Besh*

## Drivetrain

As a new team, we were using donated parts to build our robot as we didn't have the money to buy new parts. We wanted to keep the center of gravity low on the robot for stability and put the motor for the slide low so we wouldn't tip especially when we tried scoring points in the low basket. Our goal was to be able to win at least one match this season.

When we started looking at the donated drivetrain we found out that it was too big and we had to take it apart to make it half of an inch smaller. Dimond Robotics told us we should try using the Mecanum wheels since they allow the driver to go forward and backward as well as side to side.



Anna: When I joined the Mechalodons, I was greatly inexperienced in the ways of mechanical workings. I joined this team to grow my expertise and learn about and how to drive robots. The first time I drove Sharkbait, I accidentally ran over Everyn's finger and was thereby banned from driving. The next week, I was back on the controller and after a long time, I managed to score a sample. I had never really played video games except for the occasional Mario Kart once in a while, so I was pretty bad with the controller. I took Sharkbait home to practice with, and by the next meeting, I could score samples much quicker. I had to get used to how Sharkbait moves and reacts to the controller, but I have improved greatly at driving and have driven in a couple of the meets.

## Electrical

Our student mentors told us to watch the wiring or we might disconnect. We had to have enough slack in the wire connecting the motor to power so that when the robot parts move it doesn't unplug itself. We also wanted to keep the mess down to a minimum and prevent anything from catching on fire.

Our goal was to organize the wiring better so we could understand it and not get flagged anymore in inspection.

We decided to use some spiral cord with servo connectors that could stretch as the arm extended. Unfortunately only one of the two servo connectors worked (we suspect the wire is broken at some point inside the spiral plastic), so we ran another servo connector line up the middle of the spiral cord to connect the second servo.

We tied down as many cables as we could using zip ties. We visited a professional electrical worker, JC at the IBEW who gave us insight about our wiring as well as some helpful tips on wire management and how to get our claw to become more efficient. We are planning to 3D print some energy chain for our robot next year, since he said that's the best way to protect long wires around moving parts. He also told us that a low-temperature hot glue is a great way to help Dupont connectors stay in place, if we're having trouble with that, so we added a hot glue gun in our toolbox.



Thank you JC and Ruby at the IBEW!!!!



J.C. and Ruby from IBEW with Erin, Everyn, Hazel, and Heather



J.C. from IBEW giving the Mechalodons pointers on better cable management

# Innovate

## The Evolution of Shark Bait

The point of the game is to score points so we need to make a mechanism that can score and a robot we can count on.

Priorities:

- Reach the high basket
- Be simple and work
- Pick up samples from the submersible

Our goal is to work with materials in the lab to create a mechanism that can pick up from the submersible and score.

We have the opportunity to work alongside a FIRST LEGO League team, Little LEGO Lynx L3 64877, and they have thousands of donated LEGO bricks they work with. They let us borrow some for our prototyping. One of our main concerns while building our robot was breakage and durability, as we are a first year team and have no



experience on how the materials handled in the field. With our drive train already made we decided to move to the claw next.

### Our Process

Each team member drew a design for what they thought would make a good claw.

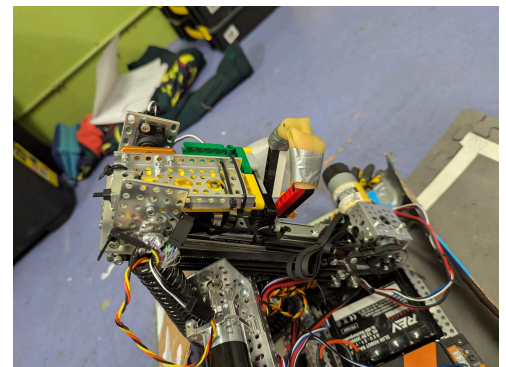
We used inspiration from our FLL team and LEGO to build our design. Then each person tried to pick up the samples using their design.

### Democracy In Action

After a hearty debate and campaign, the choice came down to two claw options. We looked at the attachment possibilities as the main reason for our decision and voted

as a team for the simpler and easier-to-attach claw. That original claw is still mostly with us on SHARK BAIT.

Once the claw was built we attached the claw to our robot. Thank you to Luke with Dimond Robotics for helping with this part. We originally thought about attaching it with a metal gear but then realized that we had to put bolts through a LEGO gear into a plastic spline attachment to make it transfer power to the claw.

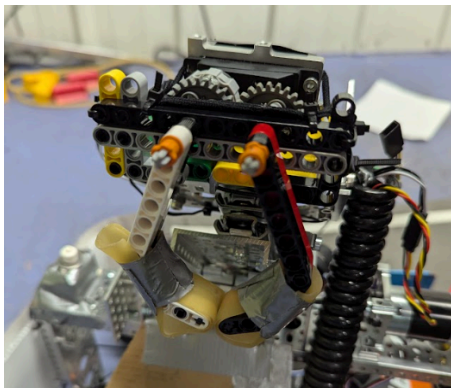


### Testing Time

In the lab, we realized that the LEGO bricks were too smooth to pick up the sample so we used surgical tubing attached to the claw to get more grip.

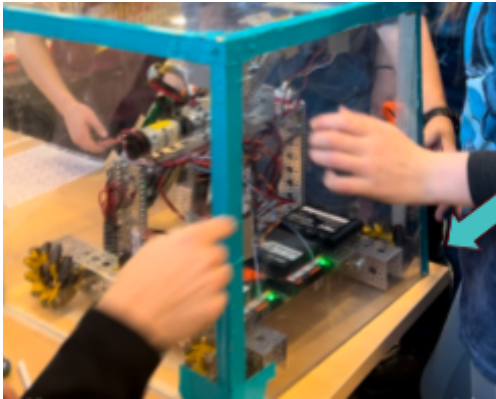
We also realized that the fingers of the claw were too narrow so we made it beefier and had more surface area.

Who knew that LEGO would be so hard to attach to metal. We drilled holes in the LEGO plates to screw them down to the metal plate, added



some zip ties for extra support, then added elastics bands to keep the gears from detaching from the servo spline if the claw gets caught on anything. We were ready for the field.

We originally had a plastic connector that connected our servo to our claw. However, over time with so much use, the inside stripped out. To fix this problem, we decided that using a metal connector would allow our robot to last longer.



### League Meet 1

On our very first inspection, the slides fell forward and broke the inspection box. We were also past the maximum extension because we found out that using programmed extension limits was not enough.

We fixed the extension problem by zip tying the slides and unplugging the motor. This stopped us from reaching any basket. The CLAW worked but the *slide did not*.

We could still drive and we had to compete so we had to think fast...

### Aunt Annie's Extra Cheddar Cheese Smiles Save the Day

Without the slides we knew we still needed to be competitive so we decided to do what many teams were already doing by making a push bot. We found cardboard from our box of snacks and duct taped it to the front. Everyn drew a face on the front and CHET was born. Welcome to the team Chet!

Then we had to be reinspected. We passed reinspection and went to the field. During our 3rd round, we realized if we let the slide out a little we could still move our claw to the ground to pick up samples and it WORKED!!! We could score.



### League Meet 2

We worked on the claw and slides in the lab and decided to shorten it. We had issues with sending the right amount of power from the motor. The arm was also banging down into position too hard, causing Shark Bait to fling samples across the field. So we decided to stick with placing samples into the lower basket and succeeded.

Our big insight of the match had less to do with the claw and more to do with the fact our main driver would not be at the first qualification match. We decided that everyone would take the robot home and practice between lab days.



### League Meet 3

While we were taking the robot home and using it to chase our siblings and animals around, Anna realized if she was holding a sample and driving around if it gets bumped it could fall out of the claw and inside the robot, making it unable to score or interact with other samples. So she got another piece of cardboard to attach to the front of the robot so the samples would slide off.

This meet our goal was to survive and explore the possibility of specimen scoring. We attempted to find a more efficient way to score in general and it seems that our drivers needed a lot more practice.



## Control

For programming, we are using OnBot Java, our robot does not have any special sensors. We are completely new to programming, especially Java. We had to have a lot of support from the Dimond team to get Shark Bait's code up and running.

**Goal:** We want to have a fully functioning drive code so Shark Bait actually works properly during qualifiers.

## Autonomous

As a new team, we do not have any experience in creating an autonomous program. So we decided to keep the program simple so that it would work every time.

**Goal:** Score points during the autonomous period even if it is only a couple of points.

Originally we had no idea how to code, We had to learn the rules of the game and learn how to program it around the rules. We knew that the max time was 30 seconds and we programmed the robot to drive forward and push a sample into the end to score 4 points. An interesting thing we found out was that we could not figure out how to change the time to less than 30 seconds. We also learned that if you rotate Chet the other way without a sample we can park in autonomous for the same amount of points and it does not matter what side we are placed on for autonomous.

**Risks:** One risk we take while running auto in competitions is if we don't start the auto fast enough, it won't stop when the timer runs out, and we will get a penalty.

## Teleop

We had to make each aspect of our robot move in a productive way, and not mess up mid-match. We needed to make sure the controller made sense because everyone on our team drives.

**Goal:** The goal for our code was for it to work in a way that enables our robot to score the most points possible.

Coding was definitely an experience for all of us, and figuring out how to code and how to operate the robot with that code was a major learning point for everyone. While our code works fine right now when we change parts or fix things, sometimes the code goes a bit wonky and doesn't work.



# OUR JOURNEY SO FAR

## League Meet 1



**Goal:** To pass our first inspection and drive our robot.

We did adequately as we had to deal with a big problem. Originally, we were going to use our claw however it was too long and heavy. So, we frantically searched for cardboard to attach to the slides of our robot so we could still score.

We learned how to troubleshoot unexpected situations. One example of that is when we were not able to use our claw like we expected, and instead of sitting out we found leftover cardboard and turned our bot into a push bot. We didn't know whether cardboard and duct tape would hold and stay for the match. Seeing as we were able to overcome an unexpected challenge, I'd say we did pretty good.

## League Meet 2

Our goal in league meet 2 was to use our finally functioning claw to score points in the first bucket. We moved up a couple places in the scoreboard, and we greatly improved in driving skills, teamwork, and determination.

We learned how to overcome challenges, and also if the claw doesn't work we can always fall back on our pushbot roots to score points. We learned to work together with our alliance partner and communicate our needs and scoring patterns.

We also realized that for the Southcentral qualifier, our lead driver, Indira, was not going to be attending so other people on the team needed to practice driving. We started sending the robot home with people so they could get more practice driving.

**Risks:** One of the risks we took was to try and use the claw in the competition even though we didn't know if it would work efficiently. The claw might not have worked, and we would be left with a broken robot with only a pushbot.

Our team did really well for being a first-year team, moving up to 16th place while also improving our driving and cooperating skills within our team and with other teams.



## League Meet 3



Throughout the meeting there were many strategies utilized to gain the upper hand (totally worked). By allowing everyone to participate in driving we allowed for everyone to bring their ideas to the table about different strategies for driving. This meeting undoubtedly helped refine the team's ability to perform under pressure and keep going even when it got overwhelming and hard. Our main goal was to make it through with a functioning robot.

**Risks:** Trying new strategies is of course risky in its own right especially right in the middle of a match. We took a lot of risks trying some out but also gained a little at the same time (wasted too much time trying to grab from the middle, tried to block another team, etc...)

## South Central Qualifier #1

Our main goal at this qualifier was to gain experience, chiefly judging, and to hopefully make it through with a complete, unbroken claw. We studied the different robot designs other teams had and learned what worked best for gaining points, and we learned new strategies when we had to work with different alliance partners.



**Indira:** For me, I was really excited. Partly because it was our first qualifier ever, and we were taking a bus all the way to Wasilla, which was very cool. Also, it was because I rescheduled my flight to make it there. And even though it was a bit miserable that night on the airplane, it was totally worth it to be there! We did super amazing, too! We added a shark mural, moved up in the ranking, and we all improved our skills as drivers throughout the matches.



## South Central Qualifier #2

When the Mechaldons got picked as an alliance and I had to go up and say we as a team accepted I gotta say I was pretty excited for our team to compete for **THE ULTIMATE FINALS!** (They totally told us they would pick us for alliance so we weren't that shocked).

### Invitation to State

When I got the text message, I honestly didn't believe it, because my little sister came running up and told me. I didn't see it myself until later, and figured that she misunderstood the message. However, upon further investigation, I found out that it was true. This made me both excited and nervous, because we only had one week to prepare, and that wasn't much time, but also, **WE MADE IT TO STATE IN OUR VERY FIRST YEAR!!** Honestly, I don't think we're completely ready, but I think it will be an exciting and fun experience, and we will try our best.



# Connect

## Developing Our Team



Our goal is to introduce robots to people who didn't see robotics as an option and get exposure to how neat robotics is. This will increase the competition at the high school level by getting Middle School students two years of robotics experience before high school.

Offer a program to middle and high schools that don't have FIRST. Currently, we have students from:

- South High School
- Frontier Charter School
- Romig Middle School
- Central Middle School

## Where we started

As a brand new rookie team, we started the summer with two people and then dropped to one, however, our team captain Erin did not give up.

The cheese stands alone - Erin was alone at kick-off supported by Dimond Robotics (her fan club). Fortunately, we did have two people who were interested in joining our team to show up.

Dimond Robotics helped host a Student Scientist Spotlight where they met Indira and talked to her about joining robotics, and Indira brought her friend Anna, adding another member to our team. Our online advertising brought us Everyn and Hazel. Coach Poole found us Central student and Social Media extraordinaire Quentin.



Taking every opportunity we can to talk to others about joining our team is the best way we can expand.

Some of our concerns:

- With no other Middle School programs our middle school students will likely be asked to join teams at their home high school. We know Dimond Robotics is enticing a few of our middle schoolers to move over to their team when they become freshmen.
- The goal of this team is to give Anchorage kids more robotics experience. We get to start on the same team and as we grow we get to see them on the opposite side of the field or beside us in an alliance.
- Our high school students who stay get to take on more important roles and teach new team members.

## How we develop our team

Everyone participates in all aspects of the team from building to driving. We all take an active role in what the team does. It's everyone's job to make sure we have fun!

- Our team of 6 is good-sized. We all get to learn each part of the robot. Some people like programming or building more but we all get to work together to figure it out.
  - o If our team gets too much bigger we might not all get to do everything.
  - o We want to be sustainable but we also don't want to turn away anyone.
  - o We might need to open up a second team which comes with a higher fundraising need.
- With everyone learning how to drive the robot we don't have one main driver with a lot of experience.
  - o We prioritize learning everything. Who knows who would be a great driver if they don't get a chance to drive?
  - o To give our team more drive time, team members take the robot home to drive around their house.
    - This gives everyone more time to get familiar with the controls as well as work out issues.
    - This also teaches us responsibilities like charging the hub as well as the robot's batteries.

## Including others

### FLL and FTC side by side

We work on our robot in the room right next door to where the FLL works. Whenever we get excited and they hear us cheering, the FLL kids will rush into our room to watch and see what is going on. This is where we get the opportunity to teach them what we have been learning about. When we were learning about LEDs and Arduino, the Fll kids ran in to see what was going on. Wanting them to get experience and learn more about how LEDs work and how to use Arduino, we let them join in on our lesson.

Our team knows that in Anchorage, FLL ends at the fifth grade and while FTC begins at middle school, there are no middle school teams. Because of this, the kids who want to get into robotics must wait until high school so that they can join a team. To resolve this problem, Team 25625 decided to become a community team that allowed 6-12 graders to join. We also do more. We allow our team members to experience all aspects in building a robot. All team members helped to build the robot and drive the robot. We are the only team where all the team members drive. This

allows for them to find what they are most interested in.

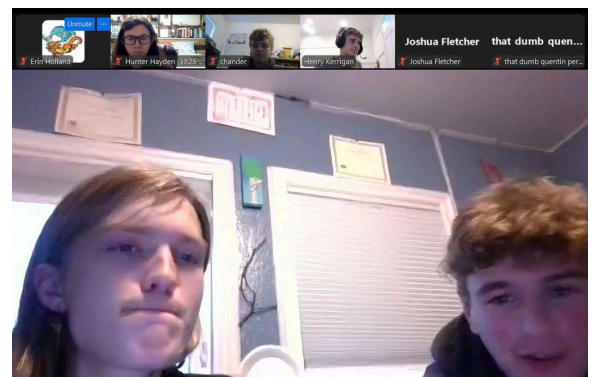
We are made up of kids from four different schools across anchorage. Romig Middle School, South High School, Frontier Charter School and Central Middle School. Next year we will have kids from two more schools—Clark and Goldenview. Because we all get out of school at different times, we meet on Sundays from 2 p.m. to 5 p.m. at the Alaska Museum of Science and Nature.

We have a presence on the internet so that students or parents looking can find us

- working on a YouTube channel
- Facebook
- Instagram

Our Facebook account has gotten over 8,500 views and our goal is to help more with the social media accounts that are run by our mentors Dimond Robotics this summer.

Beyond getting new members we also work to connect to other FTC teams. Recently FTC 3825 and FTC 3208 set up a Zoom call with two Australian teams FTC 14579 Find Theta and FTC 26000 Theseus so that we could learn from each other and share ideas. We hope to continue this relationship and collaborative effort so that we can build a stronger robotics community.



# Motivate

## Developing Our Community

**Goal:** To recruit others who know nothing about FIRST and have them experience robotics for the first time on Team FUN!

- How to find new members
  - Go to FIRST LEGO League events
    - Erin and Coach Heather Volunteered as Judges for FLL Qualifier #1
  - Put out flyers
    - Service and South High School.
    - Middle Schools - All
    - Alternate schools like Steller
    - Try Eagle River and Chugiak since we meet on Sundays they may be interested.
    - ~~Putting flyers on car windows – go after mini vans.~~ Turns out this is illegal, maybe.
    - Attend Reading Rendezvous

## Budget

Mechalodons Annual Budget	Cost
FTC Registration	\$295
Game Elements including shipping	\$700
Qualifiers South Central and Open \$50 each	\$100
State Entry \$100	\$100
Robot Parts - backup control hub, controllers, slides, and metal cutting.	\$500
<b>Total</b>	<b>\$1,695</b>

**Fundraising -** This season we were fully funded by Dimond Robotics fundraising efforts. We appreciate that but want to make sure this team is sustainable and available for years to come.

- With a connection from Dimond Robotics, we made our first presentation and secured a sponsor, DataFlow Alaska, who has agreed to ensure our program will be funded for the 2025-2026 season.
  - Using what we learned from our fundraising we can approach new donors.
- We make Stuck Duck on the Go bracelets and keychains to give out with a \$10 donation.
- We can use our home 3D printers to print and sell items in the Museum Store.

## Season Timeline

Month	Plan
Sep	Team building, get to know each other and build a robot that can be driven.
Oct	Go to our first league meet and inspection
Nov	Go to another league meet
Dec	Attend our first qualifier event
Jan	Attend our second qualifier event
Feb	State maybe? If not, we will spend some time trying out ideas we haven't had time for due to needing a functional robot for competitions and cheering for our Dimond mentors who have already qualified! On 2/5/2025 we found out we qualified for STATE!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Mar - Sep	We plan to continue meeting at least once a month to try new things and help out at the museum. We also plan to find ways to reach out to the community to encourage more kids to learn about STEM and perhaps even join our team!

## Better Together

We know that we are better together. Some things that our team members do that we really appreciate is...

### Erin

Erin is always ready for a dance party and is the team's biggest cheerleader, she is always there with a word of encouragement. - Coach Black

A great team leader and always helps get our team spirits up and have fun

- Anna

Erin is by far the best person to yell directions in your ear while you drive Shark Bait. No one else can do it better than her. - Indira

Is good at helping to get things done. -Everyn

Erin doesn't only boost morale, she also brings her ideas to the table and isn't afraid to voice her opinion or idea. -Hazel

### Anna

Anna is an exceptional driver who I am really proud of. She doesn't give herself enough credit and being around her and her bestie girl Indira especially endearing. - Erin

Anna is always available to help anyone on the team out. She is super adaptable and can drive or help program. She is the person who found out that samples can fall inside the robot and built a shield to keep that from happening. - Coach Black

Anna is really really good at driving and is good luck for the matches. Also is great in general because I said so. -Indira

Anna is really innovative and knows how to problem solve. We had an issue where we would drop the sample and it would get stuck on our robot. To combat this problem, Anna used cardboard to cover and direct the dropped samples off our robot. -Hazel

### Hazel

Hazel is great with building and a good driver. She helps the team keep on track and accomplish our tasks. -Anna

Hazel is really good at knowing what we were supposed to be doing and reminding us of this. She's also an amazing builder and always helps to fix or build the robot. - Indira

She can do everything when it comes to the robot and is a really awesome builder. - Coach Black

Hazel has a drive to learn that I find myself to be envious of, she knows what she wants to learn and she goes for it. She works hard and doesn't give up when it gets hard. That is something to respect. -Erin

### Indira

Indira is a good programmer and a great driver who leads our team to victory every time. - Anna

Indira is never afraid to take the first step, from programming to driving she is always willing to take on any challenge. What really makes her special is that when she found out she was going to not make it to the qualifier she taught the rest of the team how to drive and when her family switched their vacation so she could be there she still let everyone have a chance at driving. She could have driven every meet but she chose not to. Super proud of her. - Coach Black

as a child i yearned for the mines - indira

Indira is somebody who is driven to action, she has come a long way this year and I am very happy for her. I've seen her tackle intense situations and eventually come out on top. I admire her ambition and her judgy looks when Anna and I start dancing are way too funny. -Erin

Indira is just learning how to code. She came a long way from not knowing much, to being able to code most of the robot. To have the drive to want to learn something new and challenging is something to be respected- Hazel.

### Everyn

Everyn created the characters of Chet, Besh, and Lucretia Anthrax Watergate the 25th so he has by far contributed the most to Shark Bait. Everyn also had the idea for the claw and the pushbot. - Anna

Everyn is quite useful when it comes to transporting the robot and naming pieces of cardboard. Also he helps with the build process considerably and always has a new idea or outlook on Shark Bait. - Indira

Everyn is undoubtedly the best person on the Team!!!!!!! - Everyn

Agreed. - Coach Black

Everyn is a very reserved person, unless it's around the people he is comfortable around. He is a great kid who is very fun to be around and is especially adept in chemistry (hangman with this guy is crazy) -Erin

Everyn is willing to learn about the robot and has taken building the robot very seriously. Robotics is very important to him. He enjoys learning about how to make the robot more efficient. - Hazel

### Quentin

Quentin is the best flag holder there ever was and and really ties our team together - Indira

He has helped with outreach by creating a YouTube channel to talk about our robot and our process of building it. Quentin is a huge cheerleader and he is really good at getting to know the other teams. - Coach Black

Quentin is a great member of our team and always brings laughs and his flag holding skills wherever he goes.-Anna

Quentin is a laid back guy who tries his hardest to do what he can. He's the #1 flag carrier of course. -Erin

Quentin created a YouTube channel to advertise the team. Something that I didn't even think about. He is also someone who is fun to be around. We are all glad to have him be a part of our team. -Hazel