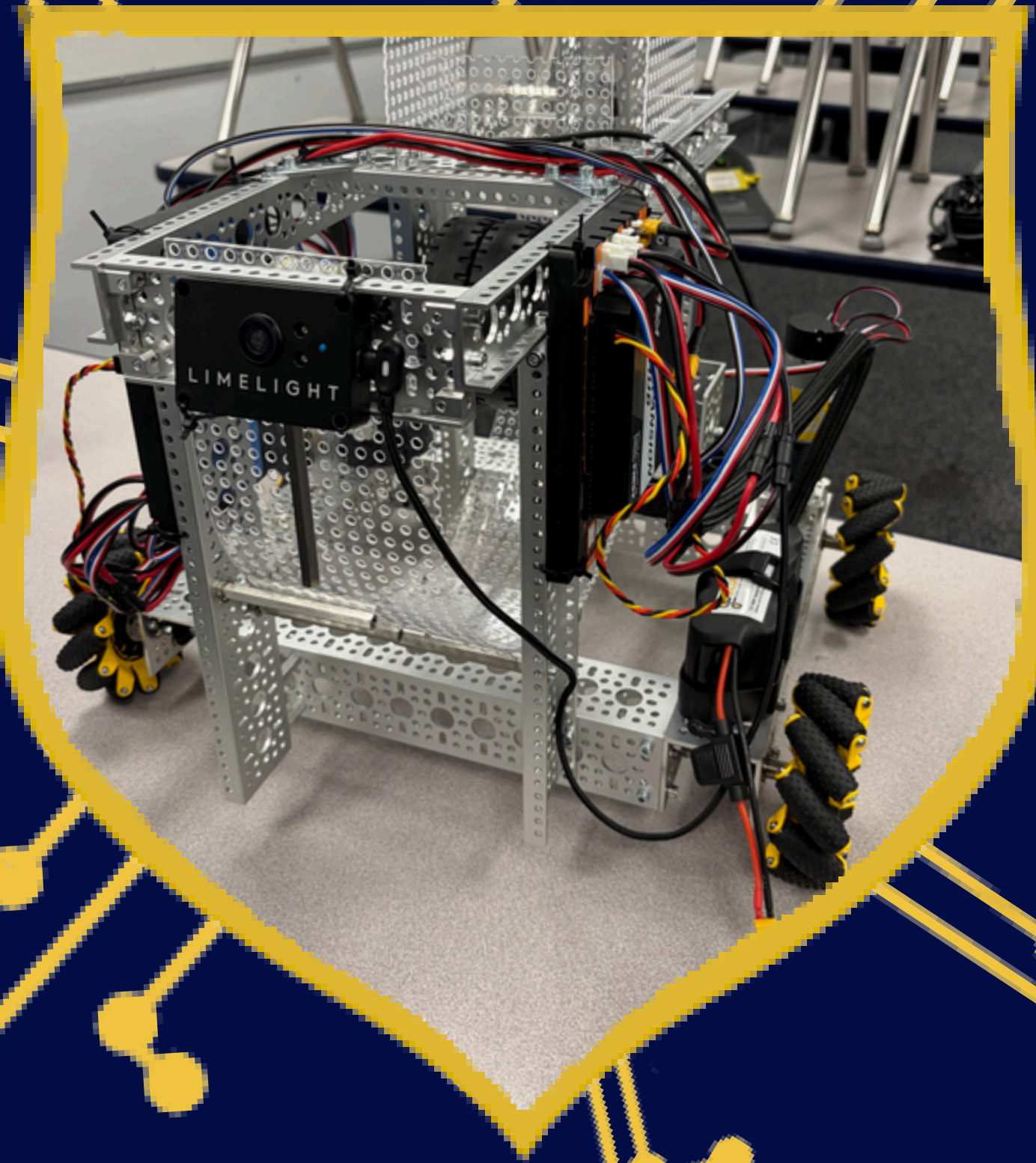


Archer Bots

FLYING ABOVE AND
BEYOND!



22818

2025 - 2026

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TEAM & SCHOOL SUMMARY



ABOUT AMPLUS ACADEMY

Amplus Academy operates as a free public charter school that welcomes and honors all. Our intent is that our students acquire knowledge and skills to become esteemed, distinguished, and productive citizens who preserve the pillars of a free and just society.

We will strive to ensure the academic, social, emotional, and developmental needs of all learners with a data-driven focus that will afford students opportunities in college and career readiness.



ABOUT OUR TEAM

We are team 22818, Archer Bots, based in Las Vegas, NV. The Robotics Club helps stimulate critical thinking and fosters learning. We are a group of people who are interested in engineering and robotics. The Robotics Club helps prepare its students for their future careers.



"Our Robotics Club gives students from grades 7-12 an opportunity to learn and experience the robotics world by enriching in, building, designing, studying, and coding robots."

-Club President, Jose Fernandez

ADVISORS

Nwe Linn, Michael Dandridge

OFFICERS

*President : Jose Fernandez, Vice President : Kylie Bailey,
Secretary : Ayven Shimamoto, Treasurer : Darian Matta,
Historian : Vivian Ha*

SECTION LEADS

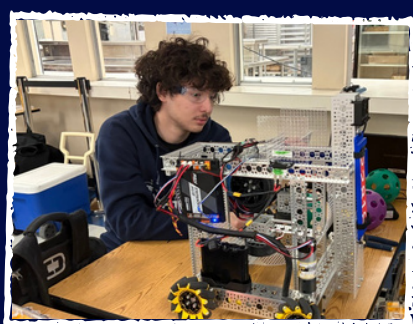
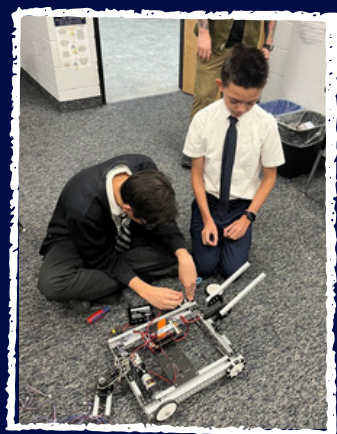
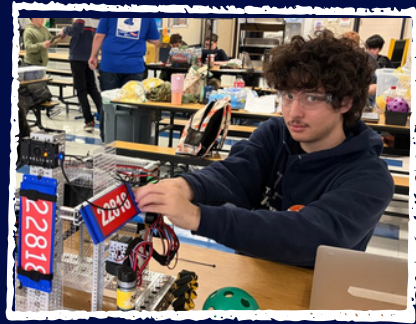
*Building : Trent Lew & Joshua Poole,
Programming : Ayven Shimamoto*

MEMBERS

Elaine Jin, Hans Ordas



MEETING OVERVIEW

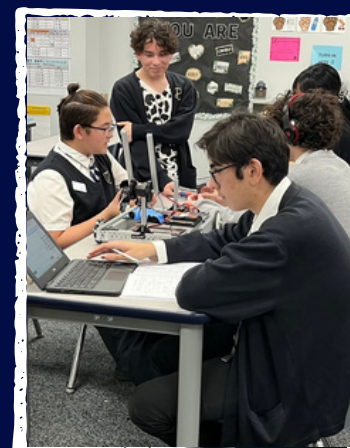


BUILDING

The building team is mainly lead by Trent and Josh. They help guild the others through the instructions for the practice bots and build the main robot. They built the base to our homecoming robot which was presented during our assembly, the crocodile head was later built by our Vice President, Kylie. The building team guides through building the robot and organizing pieces.

MEETINGS

After school three days a week, we first meet in the computer lab for 30 minutes to discuss meeting plans, any new game plans, and provide additional important information, regarding progress, important dates, etc. The remaining hour and a half is dividing and conquering, we split into 2 groups, one to code, the other to build.



PROGRAMMING

Our programming and coding team is mainly guided by our Secretary Ayven, who helps teach coding basics to new coders. They work with our HoCo robot to practice programming before transferring it to the main bot which is being built by the builders. Ayven guides them through driving, coding, and programming the practice and main robots.

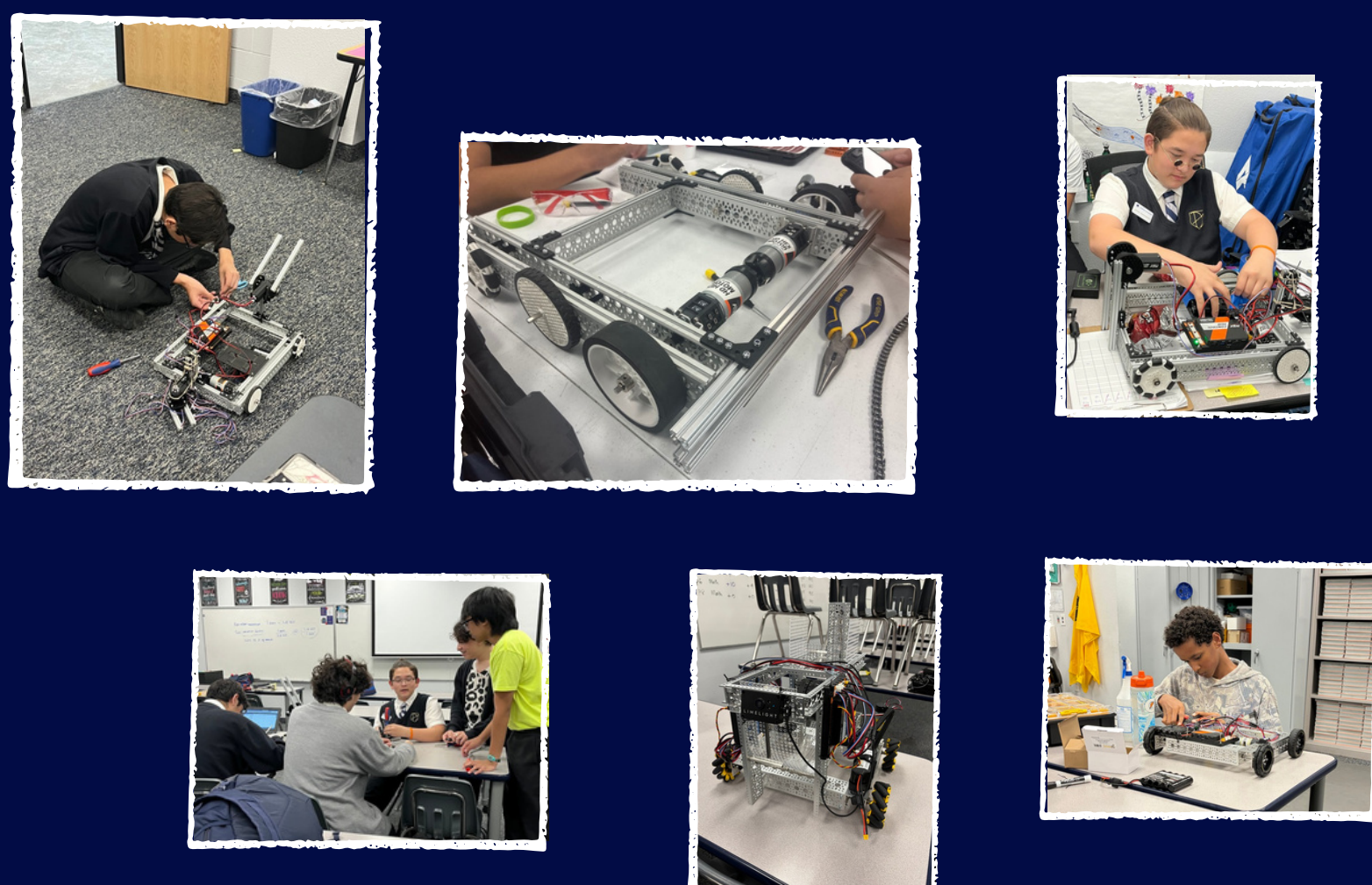


ROBOT HARDWARE



MATERIALS

For our materials, we received new robot parts from goBILDA, therefore able to create this years competition robot. In addition, we have a 3D printer to create any other parts we may want and/or need. We use old parts to make the practice bots to help both building, and programming teams.



PRACTICE ROBOT

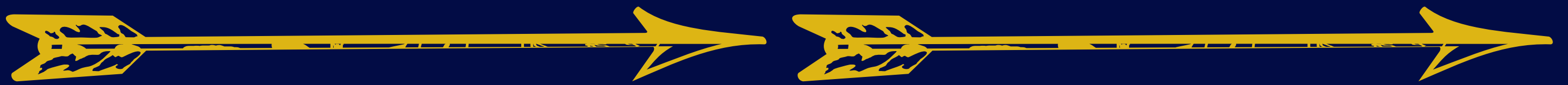
We are reusing old material for our practice bots to help the builders, programmers, and designers. These parts are used for practice for new people to get hands on experience before working with the main robot. This way, it prevents things going wrong with our main competition robot. It teaches members safety, work ethic, and how to wire cables, as well as other building basics and necessities.

MAIN ROBOT

Our main bot is worked on by our more experienced builders such as Trent Lew and Joshua Poole along with the help of new members who have a basic understanding of working on the practice bot. We're building a shooting mechanism where we use a fast spinning wheel to create friction and launch the ball upwards, using supporting pieces to aim and angle the balls movements and a limelight to read the sensors.

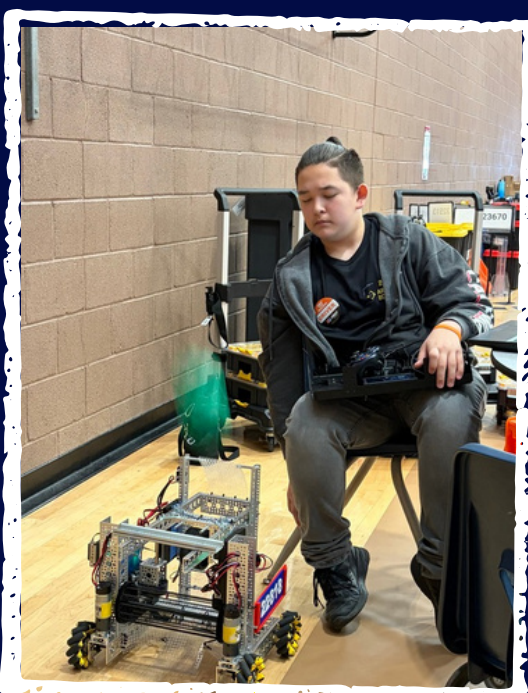
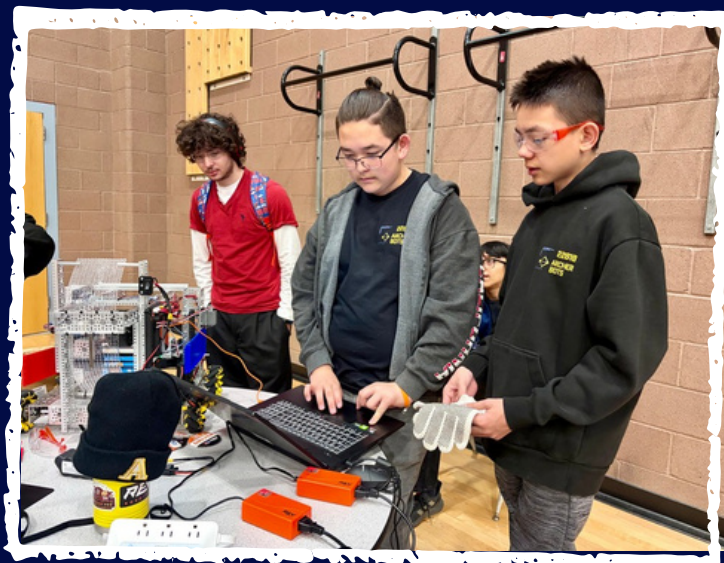


ROBOT SOFTWARE



PRACTICE BOT PROGRAMMING

Before members start coding on the main robot, they use our practice bot to get an understanding of the software and how to program it. Ayven helps through mini lessons along side the FTC sim units. This helps members get experience coding before helping with the main bot.



MAIN BOT PROGRAMMING

“As lead programmer, I worked towards creating code that improved the overall accuracy and functionality of our robot for competitions. This year, our mecanum robot was very hard to line up efficiently during scoring due to gliding. To fix this, I wrote a full Limelight auto centering program that uses vision to center the robot on targets.

This project had a steep learning curve. Early versions produced lots of oscillation, as the robot over-corrected itself. The After searching the FTC forums, Reddit and the FTC Discord I built my own acceleration/decay scheme that smoothed but didn't jitter. After several iterations and testing sessions, the robot knew how to reliably position itself in the center.

I also created an RPM sensor for our flywheel shooter, which allowed us to sense when its gathering its speed. I repeatedly ran flywheel tests, tweaked thresholds and adjusted the code until it was consistent. This increased both tele-op and autonomous aim.

I used OnBot Java and Android Studio during the season to make versions of each autonomous along with a markdown of changes, adaptation testing with drive and build teams.”

-Ayven Shimamoto, Secretary

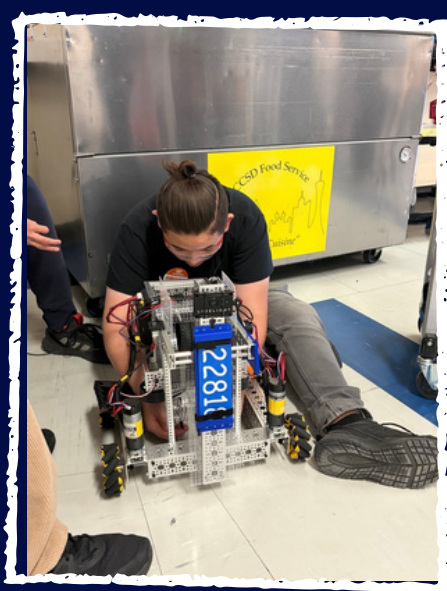
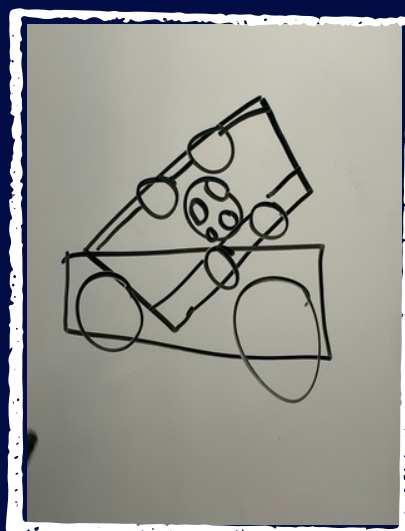
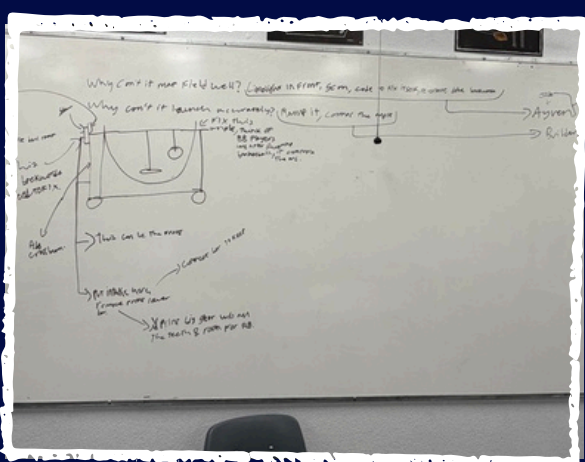
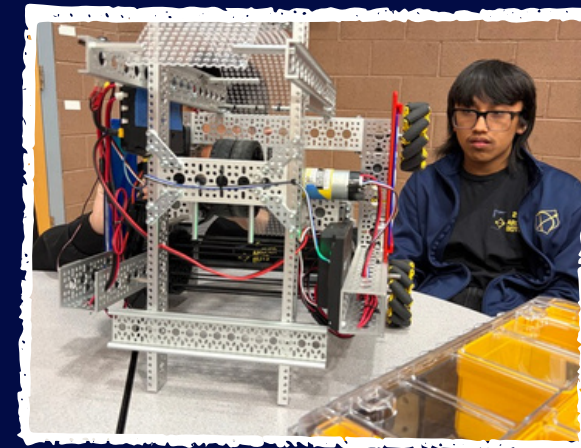
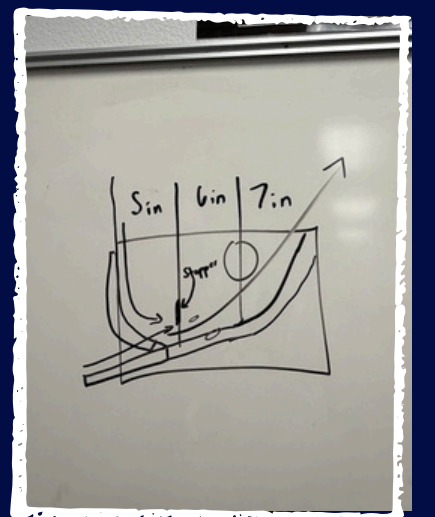
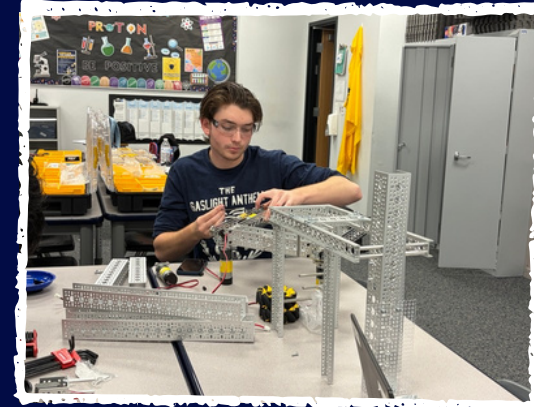
ROBOT DEVELOPMENT



CHASSIS

"To create a challenge ready robot, everything is built up from the chassis. The wheels, superstructure, and everything else is rooted here. We went through a lot of trial and error to get to our current design. This latest chassis has mecanum wheels and drive, allowing omni-directional movement. We also have a rubber band based intake and a turret superstructure allowing us to pick up and launch scoring elements. Overall, our chassis has a lot of room for improvement, so I can't wait to see where this season takes us."

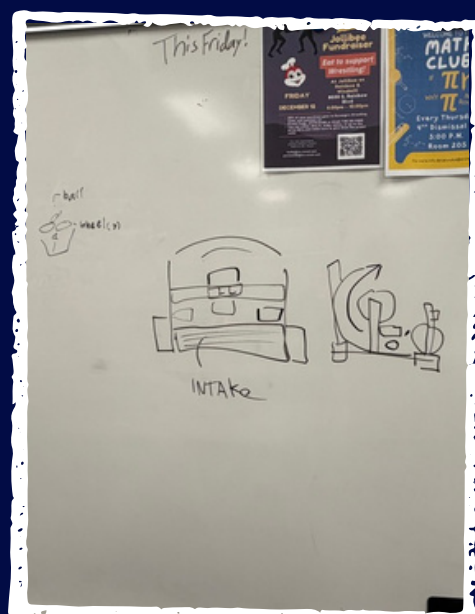
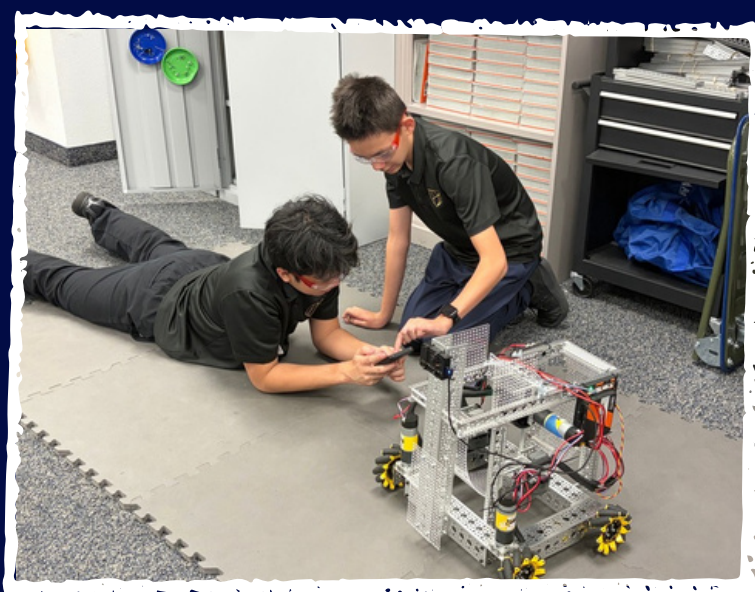
-Trent Lew, Veteran Builder



EXPERIMENTS

"When building something such as a robot or anything that involves technology, you need to experiment. Several times throughout the process we had to go back several steps and rebuild, brainstorm, test out different components, or 3D print parts that we needed but didn't have. Experimenting is fun because you're able to try out different ways to get the same (or even better) results. It goes with anything and allows you the necessary bandwidth to do something your own way. So keep experimenting, and you might make something great."

-Josh Poole, Machinist

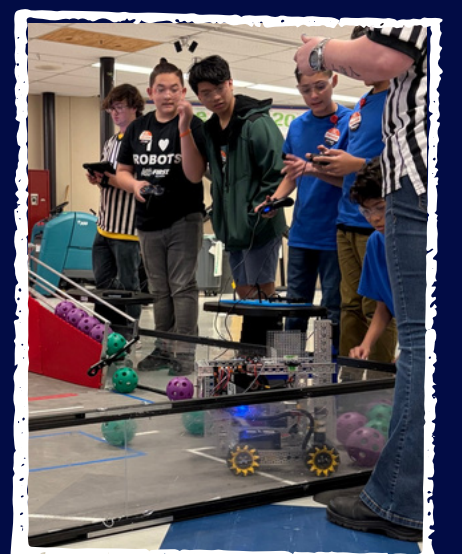
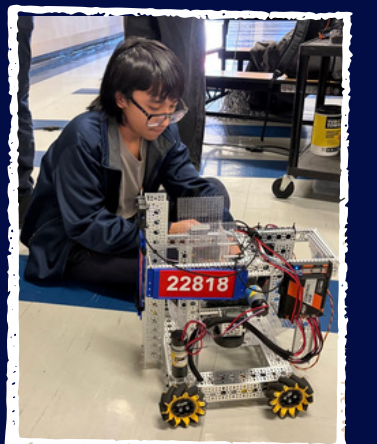


COMPETITION OVERVIEW



REFLECTION

	Went well	didn't go well	Next Steps
Meet 1	We started off strong in the first match of the game winning. We also fixed our status issue with the bot.	We at the time did not have an automatic intake system equipped into our robot to pick up the designated artifacts.	We had to create an automatic intake system for our robot.
Meet 2	Intake went perfectly after improvement!	Our range on our cannon was not optimized for the proper range, so we ended up overshooting the target.	We must calibrate the power and angle of our motors to make scoring more successful.



GAME PLAN

1



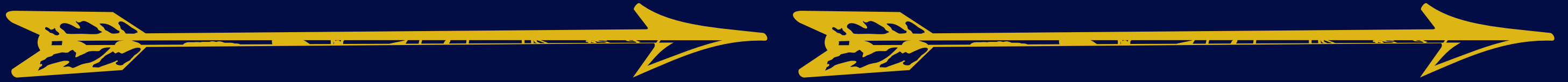
FIRST 30 SECONDS
Unload and get the robot out as quick as possible.

2



FINAL MINUTES
Fill up the basket as much as possible to score as many points as possible.

FUNDRAISING, BUSINESS PLAN & OUTREACH

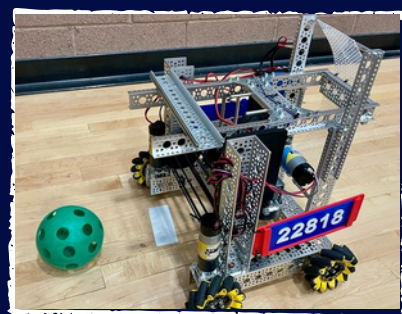
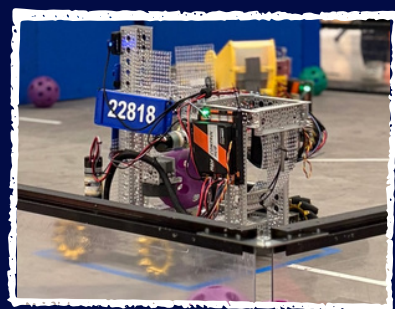
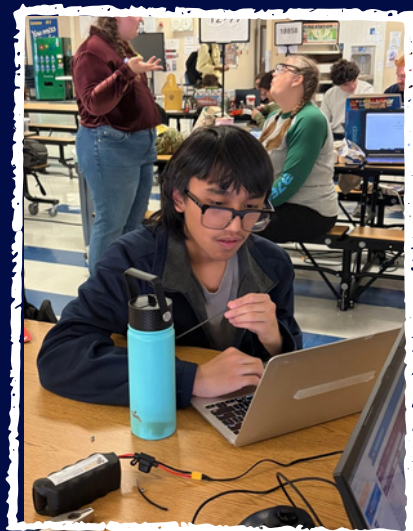
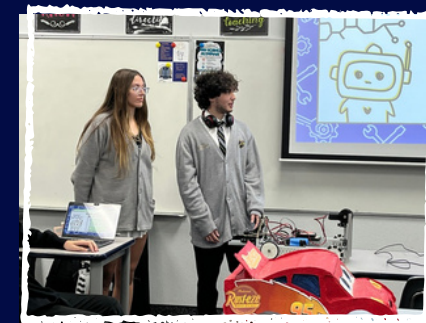


T- SHIRTS

Our team shirts as well as hoodies were sold for \$20 and \$40, ment as a fundraiser to make money for our team. Along with promotional purposes to get parents and students more involved.

TAILGATE

Tailgate is where clubs stay after school for an event, often before a sports game to sell and promote. We sold Canes and made \$133 in profit



CURRENT FINANCIALS

“Currently our financials are looking great, our school does annually reset our budget, but with club fees and phenomenal fundraising we’re doing okay in our current financials”

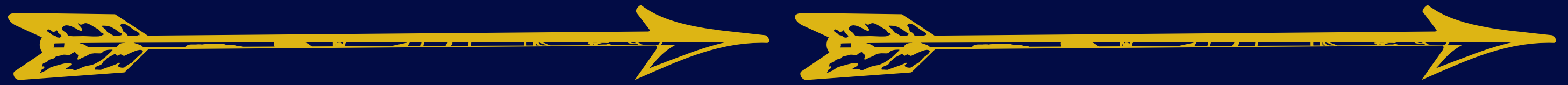
-Club Treasurer

BITE NIGHTS

We parterned with Handels a who has fantastic ice cream. We made a total of \$80 because our school loves ice cream and we can not wait to partner with them again.

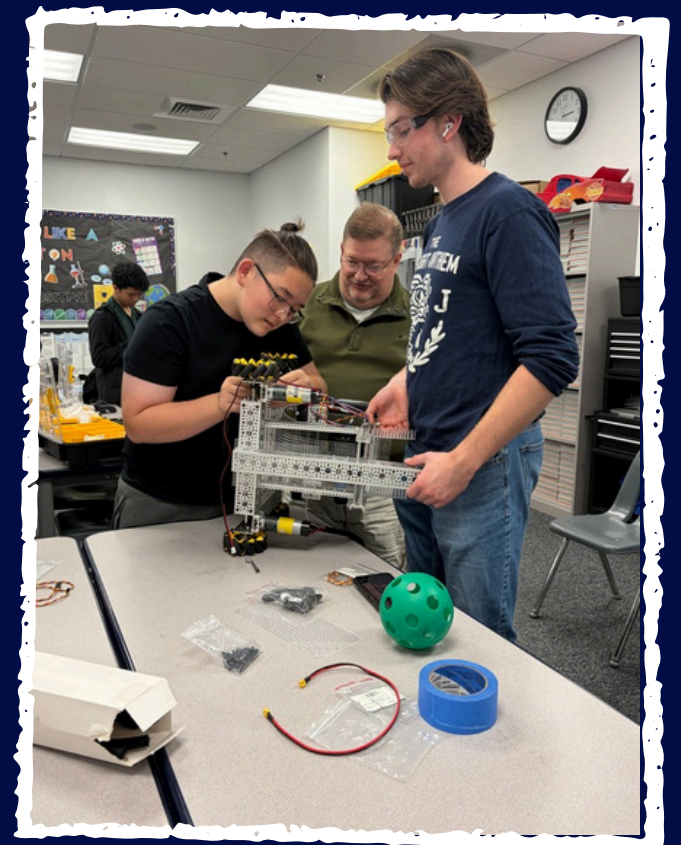
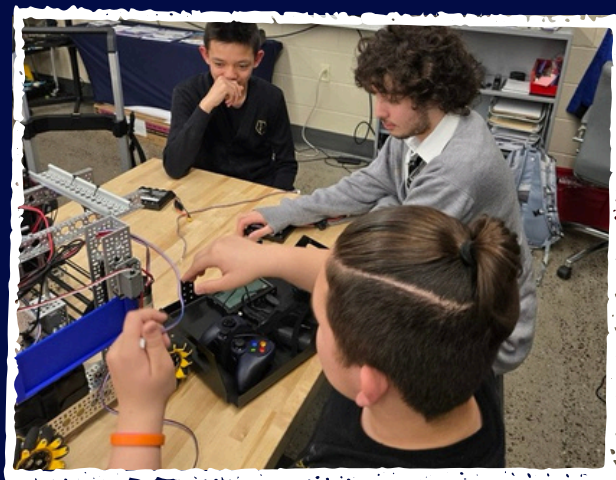


ADDITIONAL CLUB ACTIVITIES

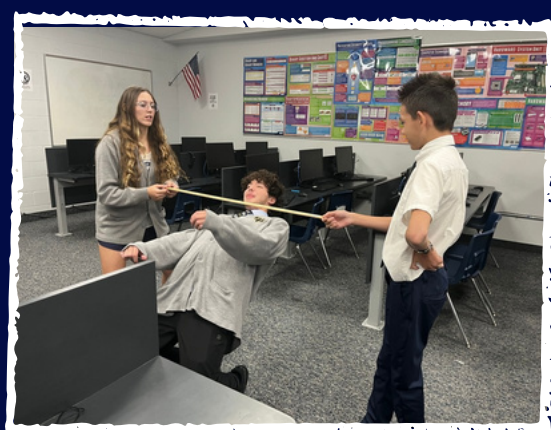


ROBOT-IN-A-DAY

Robot in a Days are a way where we can meet up early on weekends at other schools (Meadows, Nasir Academy) or our own, to work on our robot, it gives us extra time to maximize the amount we have. We build are main structures and codes during this time and use normal club hours to brainstorm and finalize, as well as fixing things that need it. This additional time also allows us to build stronger relationships as a team.



TEAM BONDING



HOCO CROCODILE

The homecoming robot was built for our homecoming assembly, presented to promote our club as well as club activities. Through this, we gained more members and funding. We built a crocodile to match our HoCo theme.



SUMMARY



We are team 22818, Archer Bots. We work to give students and members additional learning experiences through the Robotics club; programming, coding, building, designing, and advertising. We create daily goals to maximize productivity and have additional events to fundraise, have more work time, and build team relationships. We work together to teach and learn from each other with encouragement and hands on approaches.

