

LET'S "CHANGE UP" THE TYPICAL

Girl **Powered.**
Redefining the Face of STEM

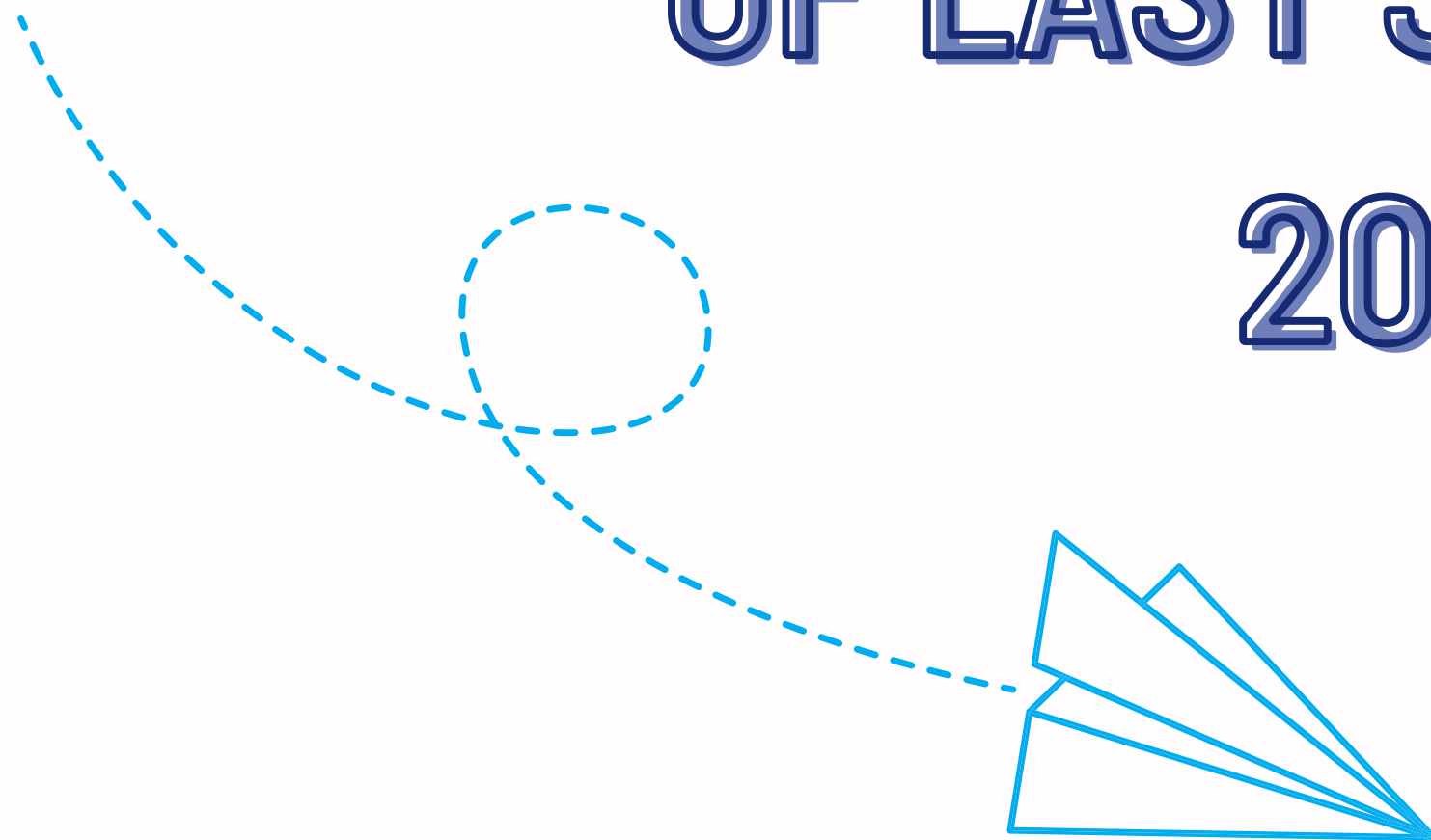
11476B

#GIRLPOWERED

Oftentimes, females are belittled in STEM. It's become rather typical to neglect the dreams of females when their passions are directed toward what is considered a "male-oriented industry". When I hear this phrase "Girl Powered" and this movement of girls in STEM, I feel obligated as a female Hispanic with a passion for STEM to help improve the perception of our gender-biased community. We can only accomplish this "Girl Powered" ideology with the support and acknowledgement of our peers. This will not be an easy task, however as a teenage girl in robotics, I know how it feels to have my dreams in STEM dismissed simply because of my gender, which is why we need to encourage and create awareness for up and coming girls who might share my passion and dedication for STEM. In our robotics team, we are trying to create an inclusive environment among our members and community by hosting Girl Powered Workshops, having weekly discussions amongst each other, and making sure ALL students are welcomed to our robotics team.

LET US TAKE A TRIP BACK TO THE START
OF LAST SCHOOL YEAR...

2019-2020



THE START OF SOMETHING GREAT

At the beginning of the school year, we dedicated two weeks to discover our "hidden skills"! We called this competitive, yet exhilarating experience - **"role trials"**. Personally, I thought of this "role trial" as a test, so as a typical American would be, I was nervous, especially given my little experience with all aspects of robotics (building, programing, documentation, etc) that I had from a PLTW engineering course I took in Middle School. As a means of learning the fundamental aspects of robotics, we decided I can be the team's documenter. By doing so, I can be **hand in hand** with everyone's tasks in each role and ask questions I might have about said role. I found the transition from VEX IQ to EDR quite challenging, but **with the help of an excellent design process, cordial teammates, and a bit of assiduity, we were triumphant together.**

Through this process, we each got to **experience building, documenting, driving, and programming.** Towards the end of the season, we took time to practice all of the roles, in order to **embrace a new talent** and be able to teach new students who find an interest in robotics and what we have learned.

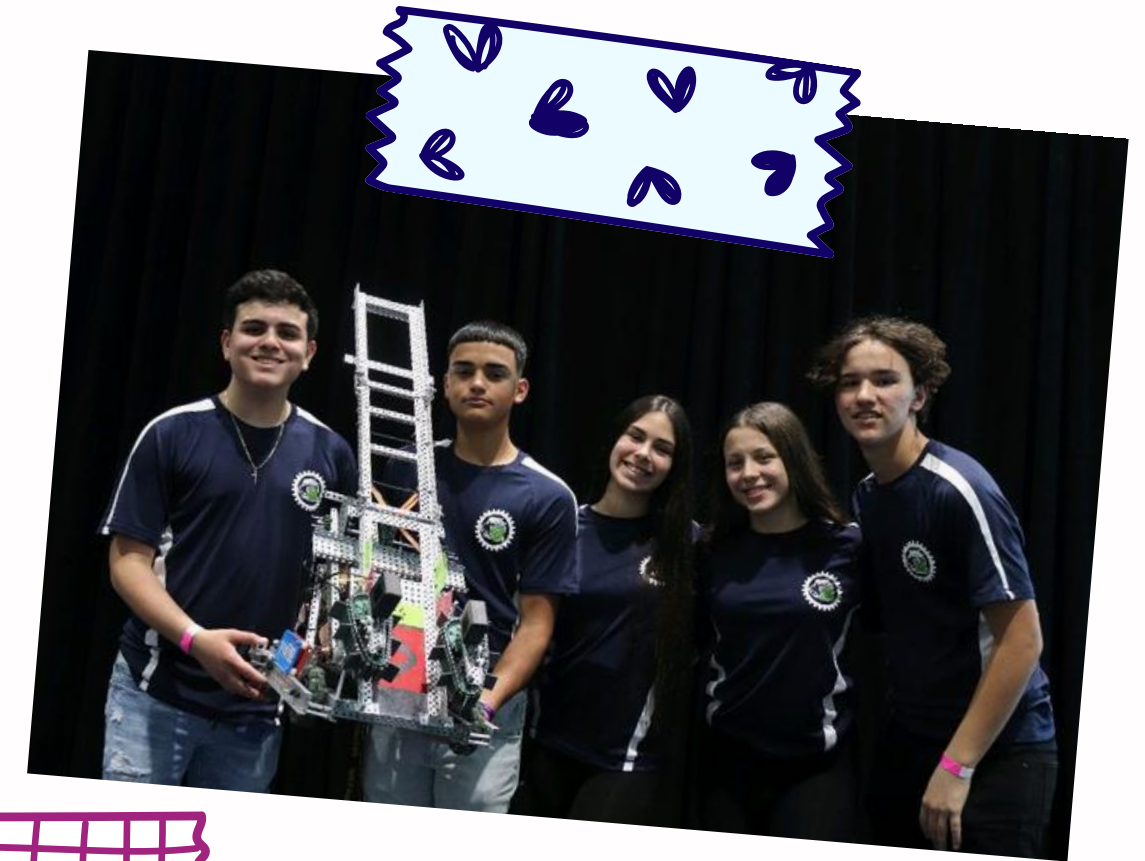


We extended our 'driving' practice to our competitions!

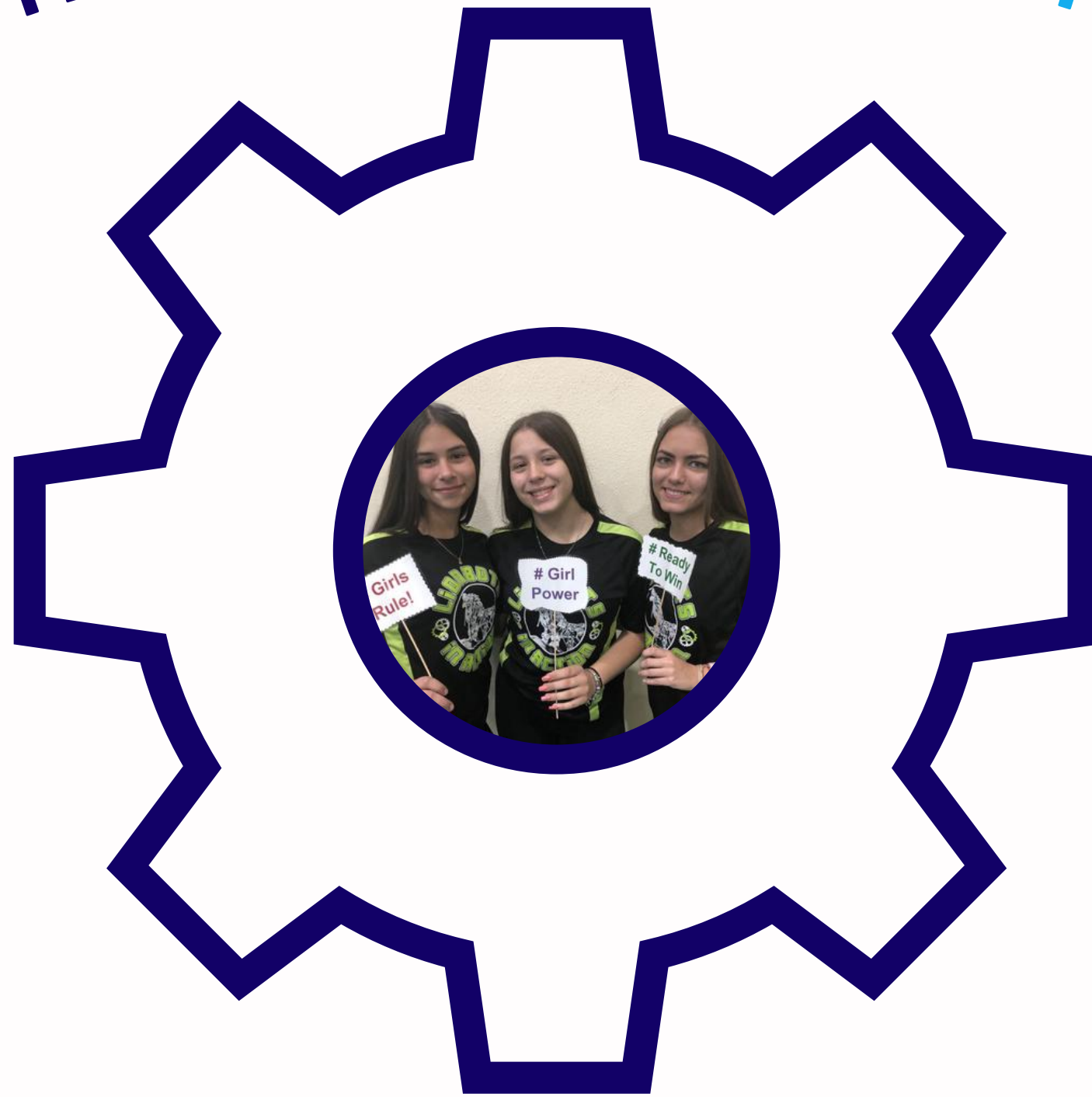


ACCEPTANCE WITH OPEN ARMS

Looking back to my first year in Mater Academy's Robotics program, one distinctive attribute is how even new members are **treated like family**. They welcomed me with **open arms** and **acknowledged** me for my adoration of robotics, not misconceptions about girls and their associations in STEM. At first, I was anxious to open up to new faces, and I wondered if I was going to be taken in. However all of those negative feelings immediately faded away from the moment I stepped into Mr. Becerra's classroom. I was greeted with nothing but **encouragement and delight** and continued to be treated with that exact assurance throughout the entire school year. Over time, we grew closer as a family and before I knew it, my afternoons were being cemented in robotics, working on competition and club ordeals. I was never judged simply for being a girl, as my teammates were always **impartial**.



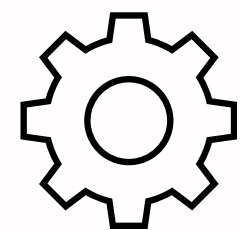
THERE IS NO "I" IN "TEAM"



Throughout last year's season "Tower Takeover", our team faced countless obstacles along the way; whether it be a design flaw, or a dilemma in the autonomous program. We always managed to find a solution to our problems effectively, which is largely due to how we problem solve: **together**. Too often do you see arguing amongst friends or differences in opinion which leads to solidity and ineffective team managing. Our team works well BECAUSE of the **difference in opinion**, as we share our perspectives on the issue and figure it out together. We try to hold discussions on a weekly basis, as part of our design process. These discussions are insightful as they give each and every member a **chance to voice** their take on the problem. After jotting down everyone's ideas, we can break each one down together and figure out the best course of action.

THE

P



W

E

R

OF DIVERSITY

Diversity among our team presents us with the opportunities of **different perspectives, ideas, and solutions**. Each and every one of us live distinct lives that influence our thought process.



Having girls on our team not only **benefits us competitively**, it also creates an **accepting environment** in our school and plants that GIRL POWERED seed in our female students. As an inclusive team, we are presented with **opportunities to triumph**. For example, this world-qualifying VRC Girl Powered Essay Challenge.

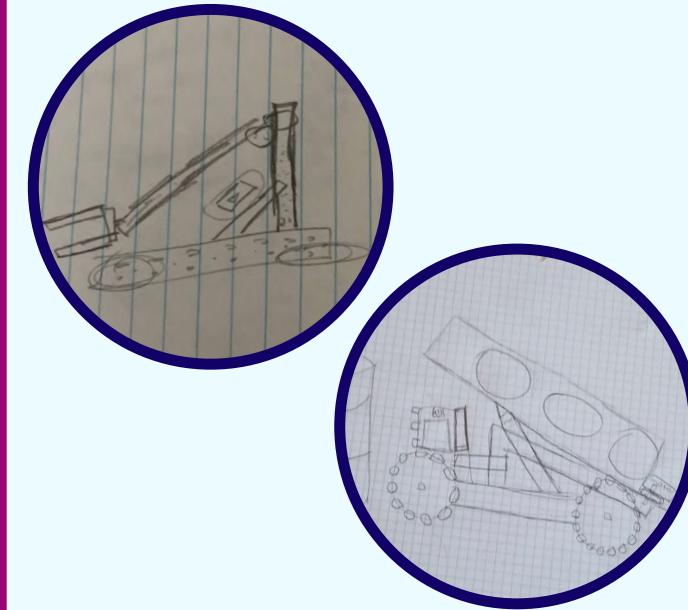
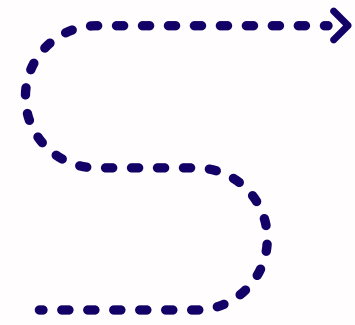
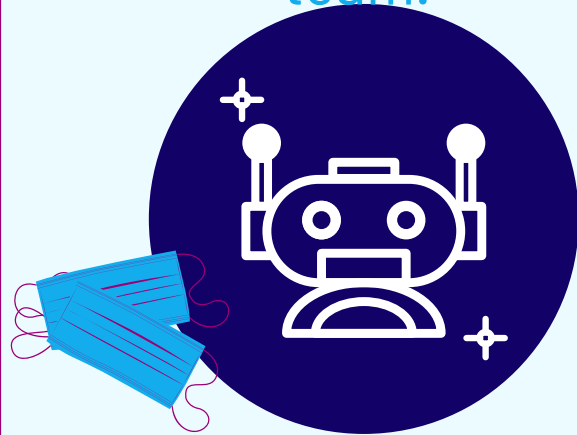




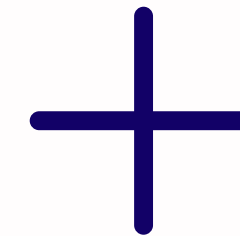
GIRL EMPOWERING MOMENTS

ADVERSITY IN CRISIS

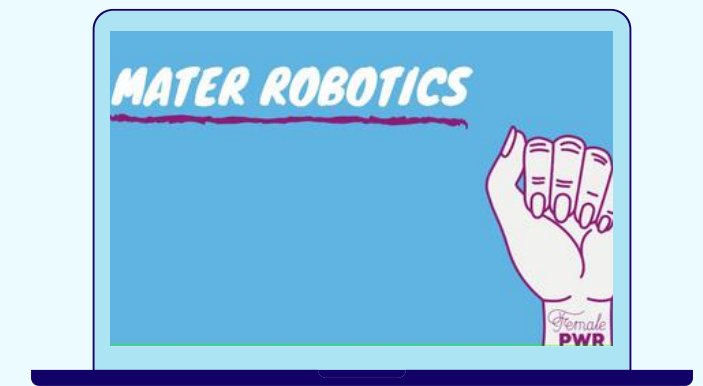
This school year has been harsh on all students world-wide. Students are losing motivation and slowly pushing away their interests. However, I did not let this discourage me or my team.



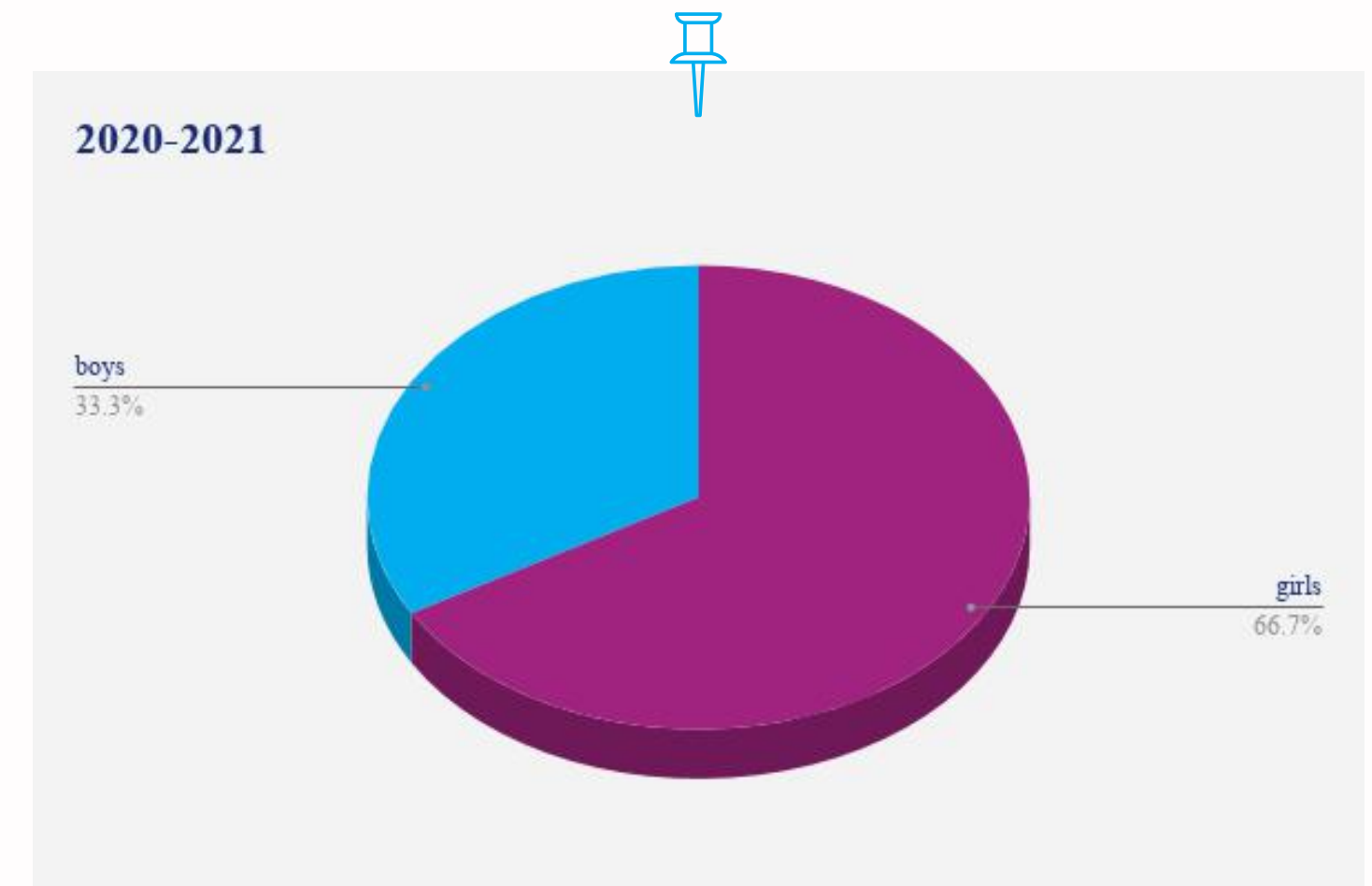
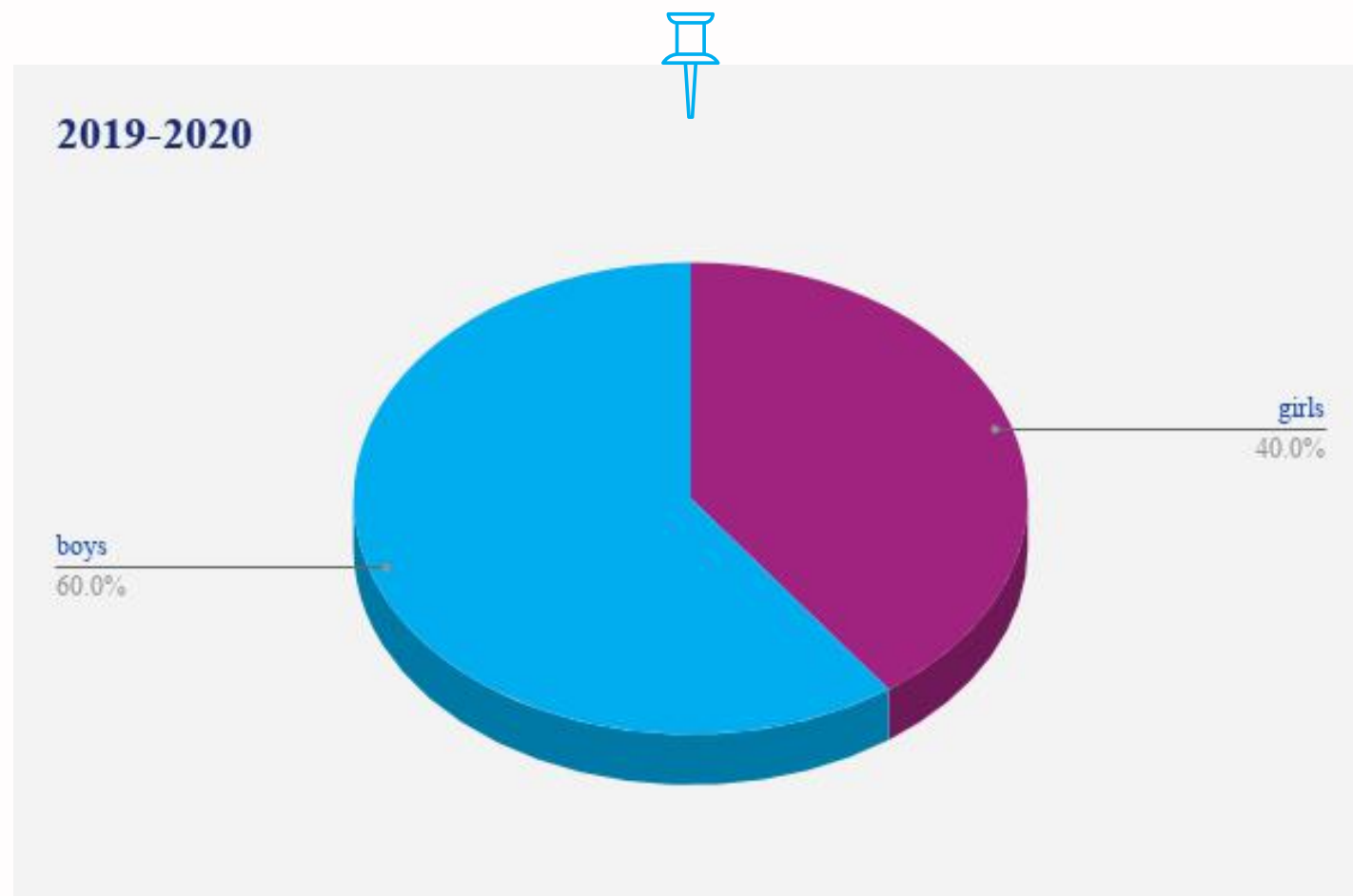
Students who sparked an interest in robotics were put into breakout rooms with one returning, experienced member. Together we watched the new VEX 2020-2021 game videos, "Change Up" and "Rise Above". Afterwards, each "team" (breakout room) was told to brainstorm a design process.



We brainstormed a way to encourage Girl Power throughout our entire school. We made Virtual Backgrounds (for Zoom classes) as showcase of our inclusive environment, and we held numerous school-wide events.

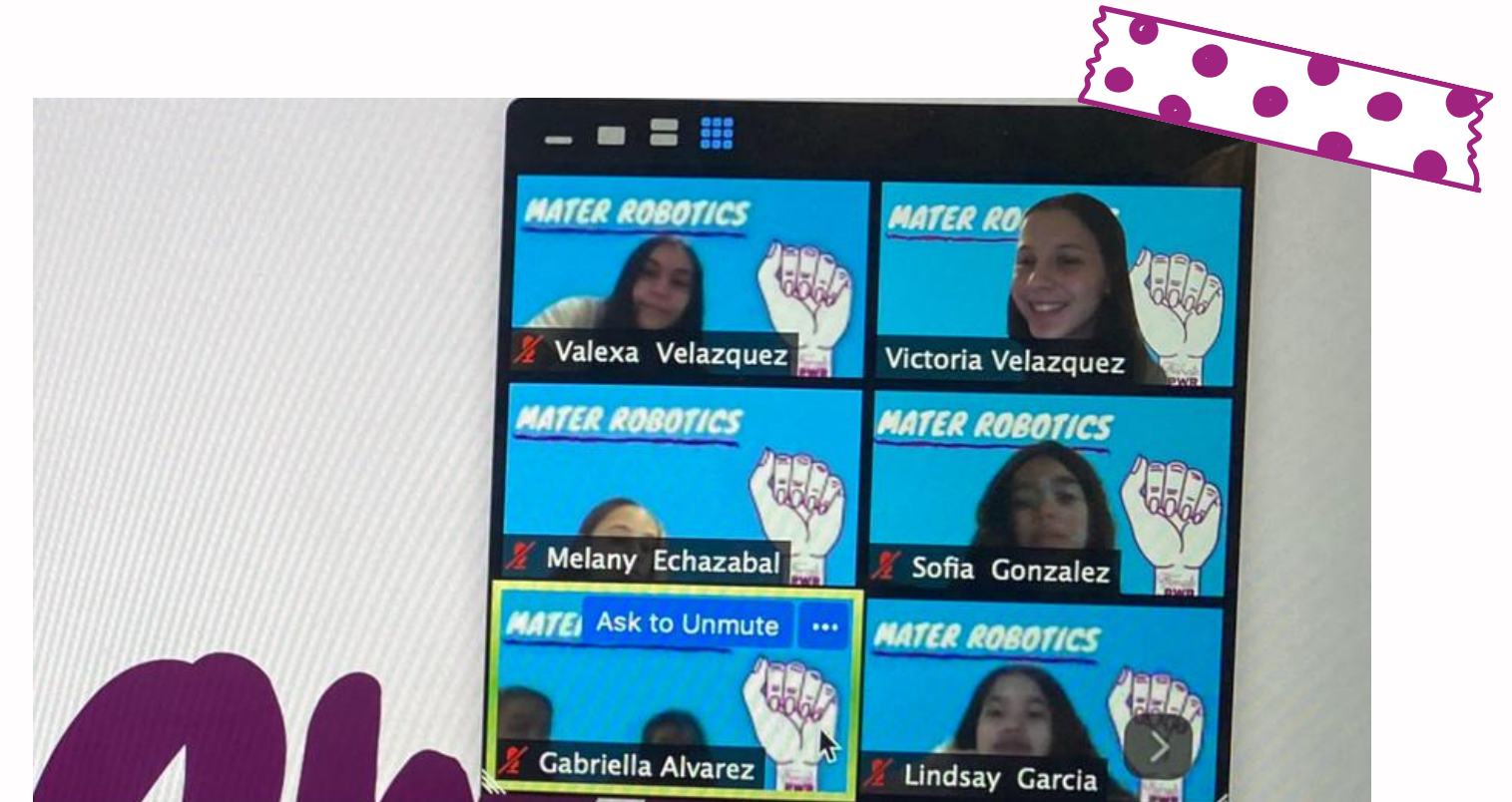


PROGRESSION OF DIVERSIFICATION



For our 2021-2022 school season, we hope to increase our girl participation by 30%!

After our first meeting with our new members, we dedicated some gatherings to **"Girl Powered" days**. I came up with the idea to host a meeting with other girls in the club to talk about our experiences as a girl in STEM. In late October, we invited some students to join us and hear about how robotics has changed our lives!



#GirlPowered Workshop



"MAKE A YO-YO"

Join Mater Robotics
and learn how to create a home-made YO-YO Via
zoom!!!

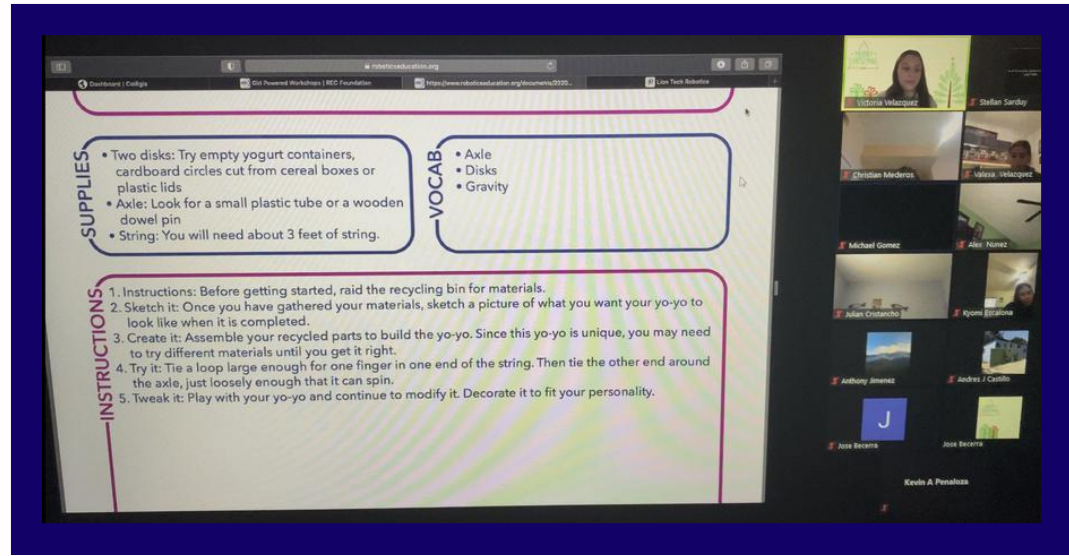
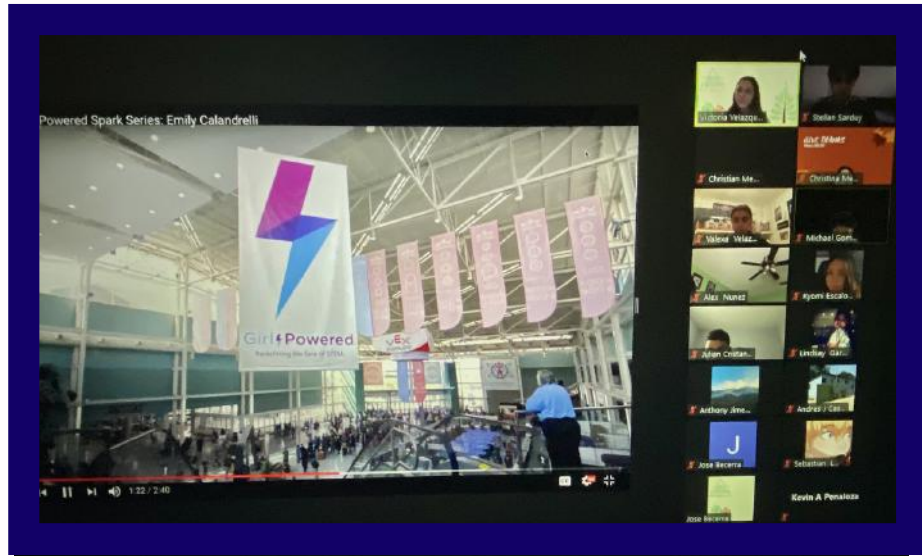
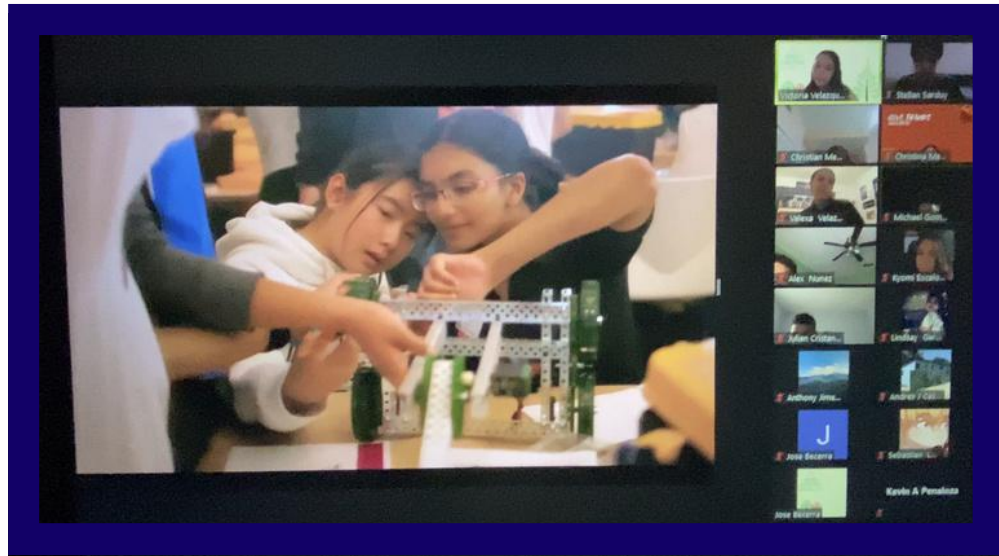
SUPPLIES: we recommend the supplies listed, but feel free
to use any materials you find around your home!!
BE CREATIVE!

- two disks: yogurt containers,
cardboard circles
cut from cereal
boxes, or plastic lids
- axle: small plastic tube or a
wooden dowel pin
- string: 3 feet of string



Girl Powered
Redefining the Face of STEM

To create a more inclusive environment in our school, we decided to host a #GirlPowered Workshop, in which we welcomed **ALL** students! For our #GirlPowered Workshop, we shared a video from the Girl Powered Spark Series and completed the STEM activity "Make A Yo-Yo", recommended on the REC Foundation Site alongside the students who joined!



EVENT GALLERY





I want to give credits to those who have impacted my life: my team, my teachers, my family, and my friends.

I cannot limit my **inspirations** to one person.

However, there is one person that has impacted all of us in Mater Robotics: **Mrs. Mills.**
She has changed our lives and embraced GIRL POWER with us.



OUR STEM ROLE MODEL



In Memory Of

I had the privilege of being one of Mrs. Mills' only female robotics students back in Middle School. She taught me everything I know about robotics and is the reason I am competing today alongside an admirable team. She was the foundation of our club.

We will forever keep her in our hearts and continue to succeed for her, the one who supported us from the beginning of our robotics journey.

Mrs. Mills had a Bachelor Degree in Architecture at University of Florida, and a Masters Degree in Education at University of Central Missouri.

She was a supporter of the Tim Tebow Foundation, was on the Historic Preservation Board, and lead the Project Lead the Way program in Missouri.



Janice Thomson Mills



ENTRANT: **Victoria Velazquez**

TITLE OF SUBMISSION: Let's
"Change Up" the Typical



TEAM NUMBER: **#11476B**