team number: 10512

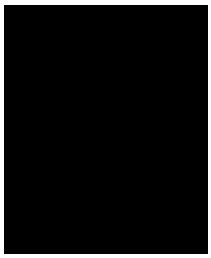
team name: Zetabots

school: Cypress Ridge

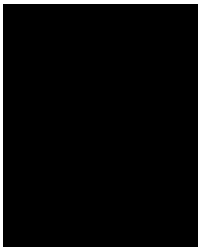
start date:

end date:

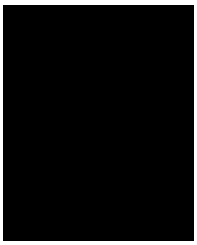
GEARING UP FOR SUCCESS



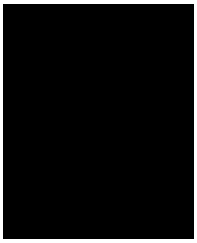
My name is **Gabriela R**. I am in the 4th grade. I've been building with Lego for 6 years. My favorite thing about Robotics is driving.



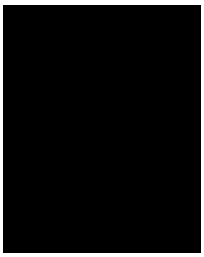
My name is **Gisselle R**. I am in the 4th grade. I've been building with Lego for 6 years. My favorite thing about Robotics is building.



My name is **Lillian M**. I am in the 5th grade. I've been building with VEX for 2 years. My favorite thing about Robotics is learning how to work with motors.

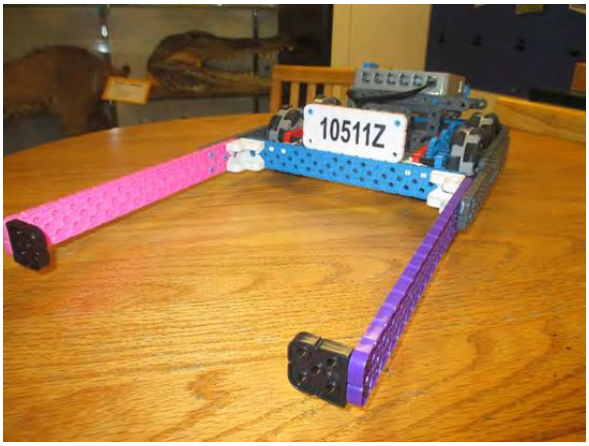


My name is **Molly H**. I am in the 4th grade. I've been building with Lego for 2 years. My favorite thing about Robotics is being able to build.



My name is **Kaitlyn W**. I am in the 5th grade. I've been building with VEX for 1 years. My favorite thing about Robotics is building.

We are team **10511Z**, the **Zetabots**. We started our team on September 30, 2021. Our goal this season is to make it to worlds by working together.



Design 1

Design 6

My Projects

page #	project name	date
1	Design 1	9/30/21
2	Connecting the brain	10/7/21
3	Weights Design2	10/14/21
4	Making our pusher Design 3	10/20/21
5	Driving	10/27/21
7/8	Creating claw-Design4	11-4-21
9	Making bigger claw	11-3-21
10	Driving	12-8-21
16	Building door	

Book 2 p. 1	Regional Championship results and reflection	3-3-22

Brainstorming

Invite a student to lead the session, and help them stay on task by repeating the title of the sessions when they stray from the objective. Appoint a student to record all of the information on a whiteboard, large paper on the wall, on the computer, or directly into this engineering notebook. Begin with **What Not How**. Let students come up with **what** they want to the robot to do, **not how** they plan to do it. The design process will follow after the strategy has been developed and agreed upon.

- Pusher
- Claw
- Stiff/strongs arm
- Moderate speed

These are good Ideas because we Can Push balls with pusher a claw to hang, also good arms to not fall while hanging, moderate ~~speed~~ speed to not crash but beat time.

Game Strategy

22 balls

Clearing Starting Corral = 5 points

Ball in the low goal = 2 points

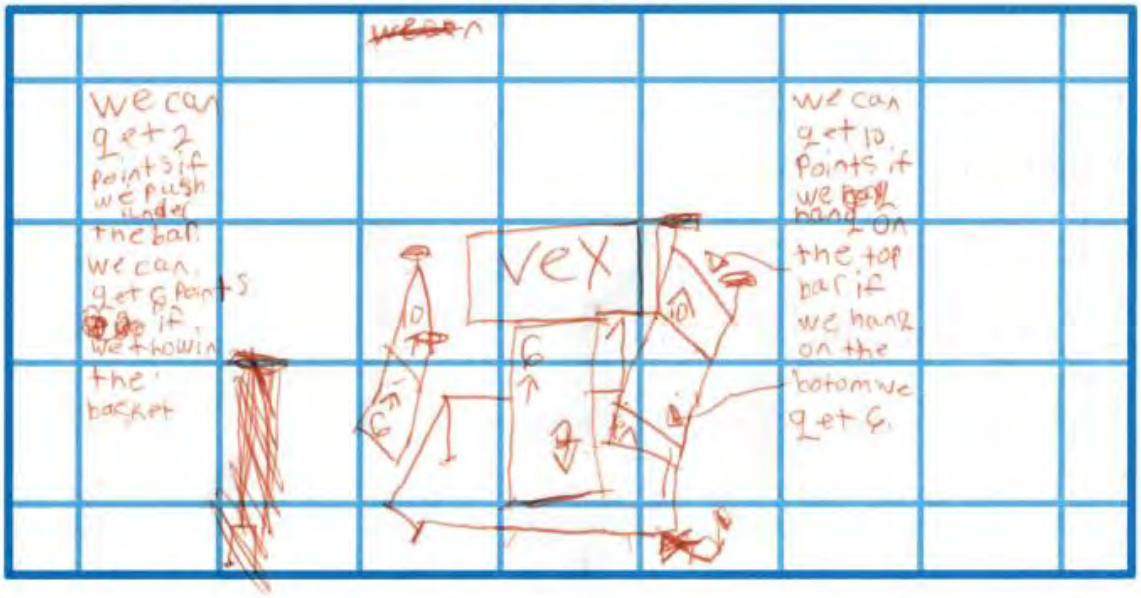
Ball in the High goal = 6 points

Robot hanging on the low = 6 points

Robot hanging on the high = 10 points

1 Design 1

Field Diagram



Fit with "11x19" Vertically 19" Small enough to fit within the small box.

So far I can to reach are goal by getting to Step 19 with building the Clawbot.

Problem= couldn't find plastic shafts.

Solution= another team let us borrow one.

we are almost done connecting the brain and wires.

name Molly H

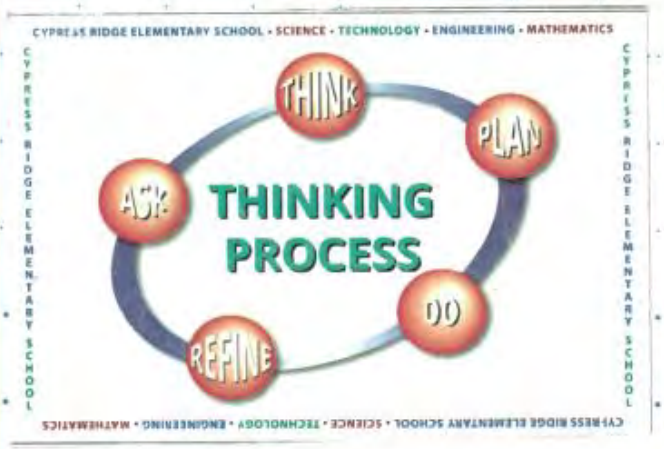
date 9/30/21

VEX IQ

Problem: The brain is not stabkize
solution: we are pinning the brain to a 1x22

Problem: robot is spinning in circles
solution: move cable from 7 to 6 so the back tires are connected to different tires

Problem: The robot was going the wrong direction
solution: we went into the setting of the brain and turned the reverse motors to normal and the normal motors to reverse.

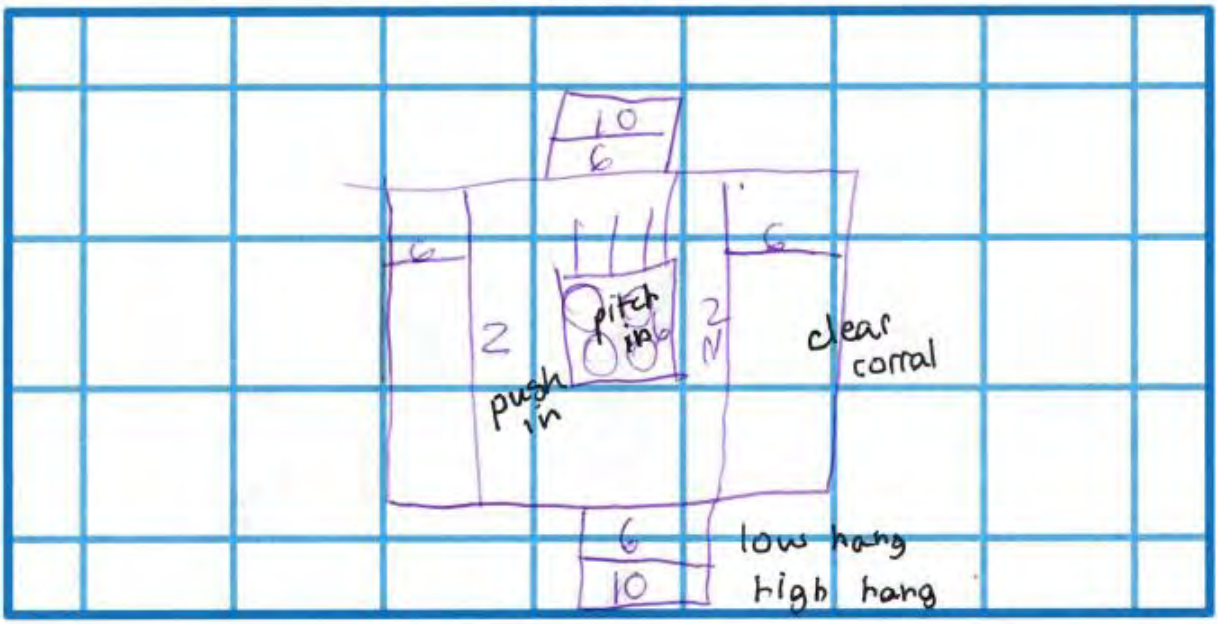


name Gabriela R[redacted]

date 10/7/21

3 Design 2

Field Diagram



Problem: There was too much weight in the back

Solution: we added weights.

Problem. There's too much weight in the front

Solution: we add weights to both front and back.

Problem: we didn't have a wide enough space to hold balls

Solution: we're making a bigger Pusher by extending the area

starting to drive a lot more and we changed our wheels to omni wheels.

we added ~~bumb~~ bumper to push back on wall

we made our Pusher and we're getting more balls in the goals

name Gisselle R

date 10/24/21

VEX IQ

Design 3

Keep your parts organized. It will save time when you are building!

We made pushers to push balls in and then we made them less flimsy and are making them sturdy. We are adding support to the pushers so they do not fall of while competing Levi helped us and we are adding another bar for more support

for the pushers we are
also makeing it more
stuckshared we made it sturdy.
we are stuck on the
pushers we are adding peices
to the back to make
it sturdy so we are also
and made it wider

name Kaitlyn W

date 10/20/21

VEX IQ

Field Diagram

Zeta boots team photo before competition

Alliance with Sparta boots

Molly and Giselle skills

☑ Think
☑ Do
☐ Test

are we ready for Sat?
practice driving

Problem: Something in the back of the robot was not connected so the grabers were falling down.

Solution: We had to connect the pin that was disconnect connect it back to the robot

This day is about getting our driving skills up for Saturday which is our competition at Pinecrest.

brainstorming for skills

name Molly H

date 10/21/21

Competition Notes

Competition Soaring Eagles 10512 Date 10/23/21

Drivers' Skills

Round	Score	Comments
Kaitlyn Gabi 1	4	work on timeing and turning slowly clearing corral
Molly Gisselle 2	0	30 seconds we have to switch
[redacted] 3	5	slower control, so we don't hit the wall

Comments
No programming on our robot YET!

Alliance Matches Lilly, Kaitlyn

Round	Score	Comments
1	11	clear corral first
2	7	get two balls in first
3	10	make sure the balls are out of the corral
4	30	after clearing corral put the balls in the goal
5	17	make sure all the balls came out of the corral
6	20	try to have control on turning before hitting the wall.
7	30	smack balls in once you clear the corral
8	4	try not to put the balls in the corner
Turn Slowly	Next practice build rubberband roller	Work on slow turning in practice

7

Field Diagram

tournament notes:

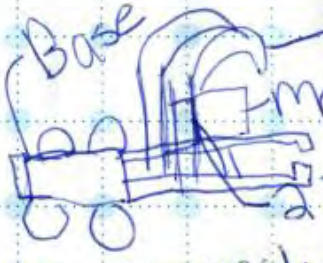
- build claw and rubberband roller
- We learned that we can flick the balls in to the scoring zone
- Everyone did great for our first competition

☐ Think
☐ Do
☐ Test

Claw

Design 4

We started our claw prototype, we got help from Matteous. We came to an agreement to the claw idea which looks like this



We are connecting the claw to the robot and we are making sure to add support so nothing falls

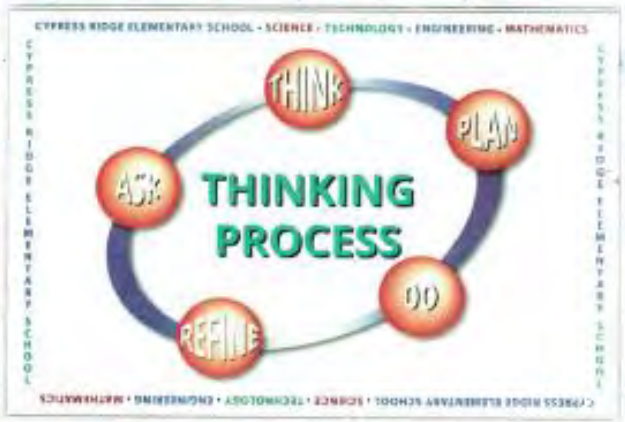
name Lilly M

date 11-4-21

VEX IQ

We need bars so the claw won't fall off. We slid the claw through the bar and we took shaft connector to get it to space out and not move. We connected the wires from the motor to the brain, so now it goes up and down, we can atempt hanging.

Claw

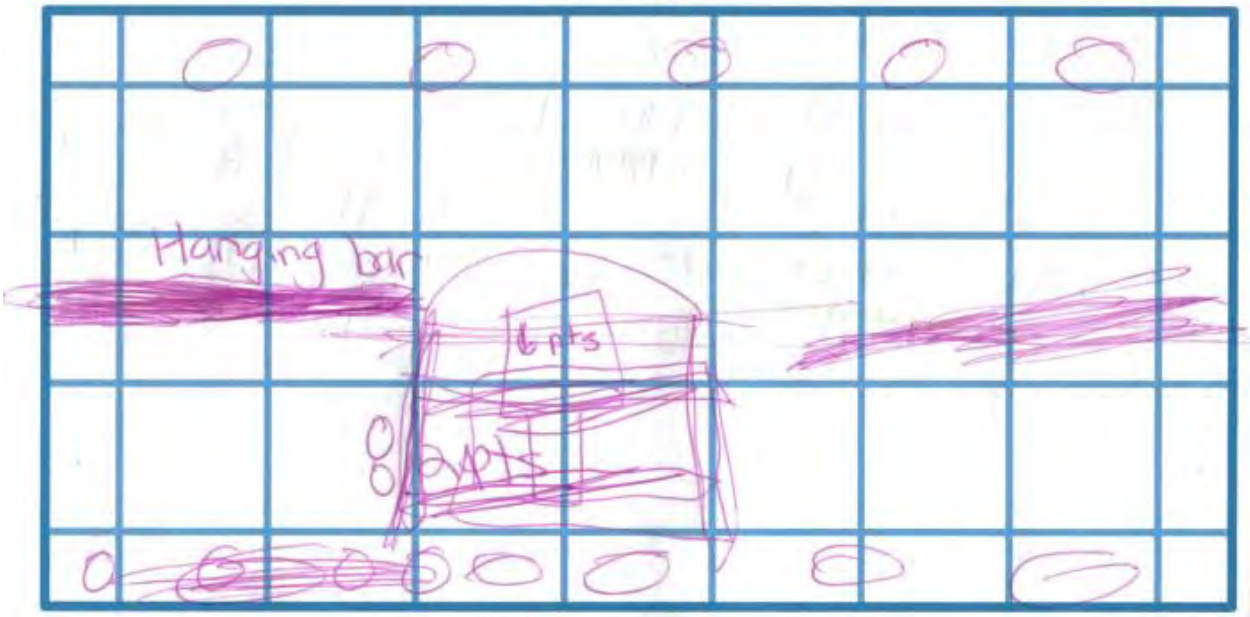


name Lilly M

date 11-4-21

9

Field Diagram



☐ Think Claw

☐ Do Design

☐ Test

Problem: When we added the claw to hang we noticed that the back of the robot was to heavy.

Solution: add weights to the front of the robot.

I was working on hanging today.

name Molly H

date 11/10/21

Claw Design 4

The Back is to heavy so we're trying to add weight to the front.

We need to add a longer shaft for our claw so it will not disconnect from our motor. The Shaft is longer and it connects better

Problem: The claws were in a slant because of the middle part

Solution: Putting the middle piece a little higher.

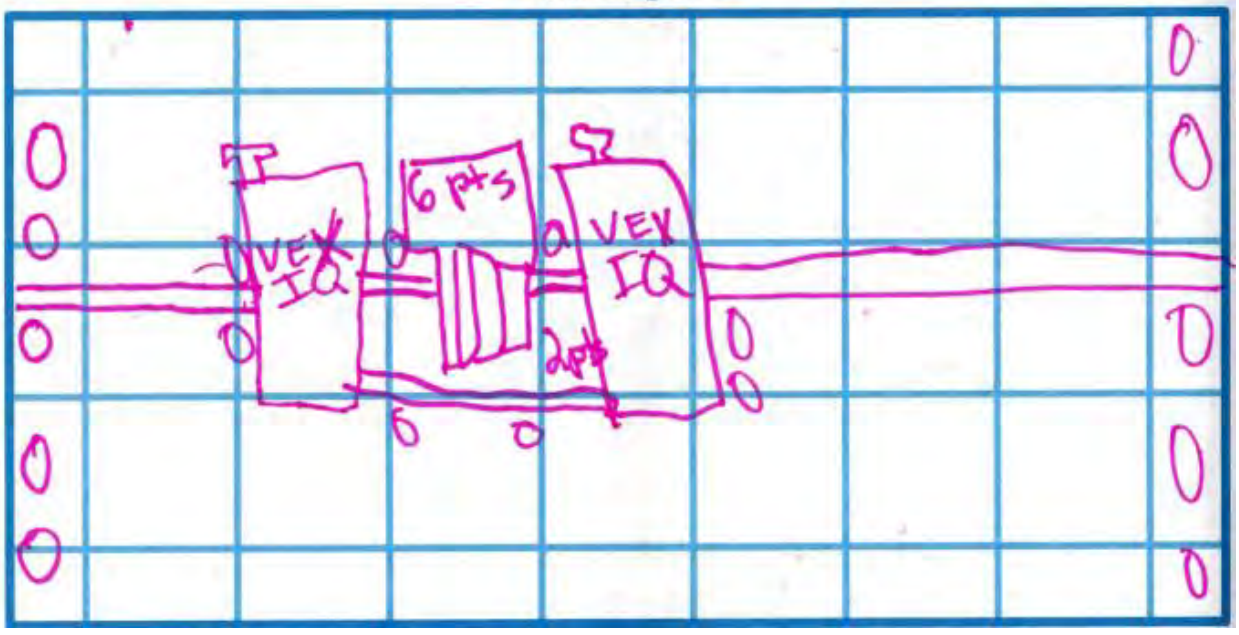
Try to connect the claw to the ~~the~~ motor without the claw turning into a V shape.
problem: the shaft keeps falling from the motor
Solution:
Next time we will make a torque ratio for our claw

name Gisselle R

date 11/18/2021

VEX IQ

11 Field Diagram



Problem: we can't hang because the back is to heavy.
solution: we are trying to position the weight so the front will be heavy.
Problem: we only have one weight.
solution: we are asking all the teams if they have any weights. Alpha lended us a weight.
-we are adding torque ratio

name Gabby B

date 12/2/21

VEX IQ

Electrical Engineers: Use math to design electronic items such as the VEX IQ brain, sensors, cell phones, computers, video games, and many other electronic items.

12

Problem: we are trying to figur out where to put the torque ratio.

name Gabriela B

date 12-2-21

VEX IQ

☐ Think
☐ Do
☐ Test

Driving

We are driving for an extra practice because we have a competition this Saturday at our school (CRES). We took off the claw because it wasn't working so we will add it back after this competition. We need to fix the arms/claw to make it sturdier. We did an alliance with alpha and scored 32 pts.

name Lilly Mc

date 12-8-21

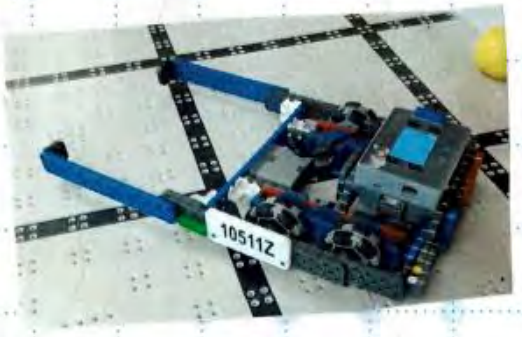
VEX IQ

we are practicing driving today with the team after 30 minutes of driving we will stop and talk strategy for this competition on the 11th at our school we need to pratice because the other teams will be counting on us and we need an invetaition to states. P.S. we are doing alot better then we were. the problem right now is when we controll it up it goes backwards when we controll it backwards it goes foreward so we are asking for help from Jayden from the beta bots so we are switching the the plug to the motor from

name Kaitlyn W. 12 to 7

date 12/9/21 and re plugging the and re calibrating

We fixed our cobot and ~~Ba~~ now it works correctly "yay" the team is so happy.



name Kaitlyn W[redacted]

date 12/9/21

VEX IQ

Aerospace Engineers: They design, construct and test aircraft and their components.

The tournament was great because made it to the finals in 3rd place and ~~last one we got last~~ our 1st one we got last place.

We are planning on building a door so we can gather balls without them coming out and we're starting right now and continue during Christmas break.

name Giselle R

date 12/16/21

Competition Notes

Competition Osprey Challenge Zetabots Date 12/11/21

Zetabots

Drivers' Skills

Round	Score	Comments
1 Gabby + Giselle	5	we cleared the corral work on pushing the balls into the scoring goal
2 Molly	12	we got one in the circle and cleared both corrals but we need to work harder
3	15	we cleared the corral and then switched and got bit

Round	Score	Comments
1	7	we did great we need to work on timing
2	23	We did great we need to make sure we don't get balls stuck
3	40	we did really good with clearing corral and putting balls in
4	18	We had trouble clearing the corral and turning, but we did pretty good.
5	5	We did good just need to work on clearing the corral
6	32	we did great but we could work on putting more balls in the goal
7	30	We cleared the corral but we need to get balls in the scoring goal
8	40	we did good getting balls in to the scoring goal we need to work on getting the balls out of the corrals

After two competitions the team discussed what improvements we could build to add on to our robot. We decided that we needed to find away to keep the balls from flying out of the arms when we turned. We have previously tried adjusting the turning velocity but we needed something more. The team decided to build a gate that would close to contain the balls in the arms. We used the design from the

After ~~the~~ Shifting the brain and moving it foreword it was front heavy so we needed to add wait to the back. To overcome this problem we untached the gate from in front of the brain add reatached it to the back of the brain. After that we added side braces to the side to make it less flimsey and more Stable. and then plugged the cord into port ten on the brain.

name Kaitlyn W

date 12/30/21 Zeta bots

VEX IQ

We also noticed that port 6,7 and 10 wock well together on the brain. Two thing our team is concecored about is if our robot will fit under the low hang bar and how we will conect arms to hang. One thing that will take some practice is learning to maneuver our new gate.

name Kaitlyn W

date 12/30/21 Zetabots

We built claws on the robot to hang we fell into a few problems like the~~s~~ claws were not sturdy enough or in the right place. After several tests we got it to hang ~~perfectly~~ ("Yay"). We also had to adjust the gate to be four ~~hole~~ pegs shorter because it was too tall for students. We also drove and got use to the new adjustments. ~~And~~ We are super confident for the next competition.

Name ~~Kairlyn~~ Kairlyn W

Date 1/7/22 Zeta bots

we started programing with Speed and the arm

1. Arm up
2. turned right 90°
3. forward 5 in
4. left 45°
5. forward 2 in
6. left 15
7. forward 36.
8. Arm down

forward 5 in

ame Molly H

ate 1/12/22 Zeta bots

VEX IQ

Problem: We can't go under the bar

Solution: Because of our supporting bar in the back, we will not be going under the bar. We are working on clearing half the court. We are spending time on figuring out programming. In a competition, if we want to hang, we need a full battery

name Lilly M

date 1/13/22 Zetabots

VEX IQ

When our robot turn ~~left~~ right it won't do anything we fixed that by reseting the motor to the brain.
having trouble going under bar.
need to make space on bottom back of robot so we can go under bar.
we did that by making the ~~bar~~ beam go up instead of flat.

name ~~Gissette~~ Gisselle R
date Jan 20, 2022 zeta bots

VEX IQ

~~Today we are starting the book~~

today we took the short axels out and put longer ones in so they could go all the way through the rails to make it more stable.

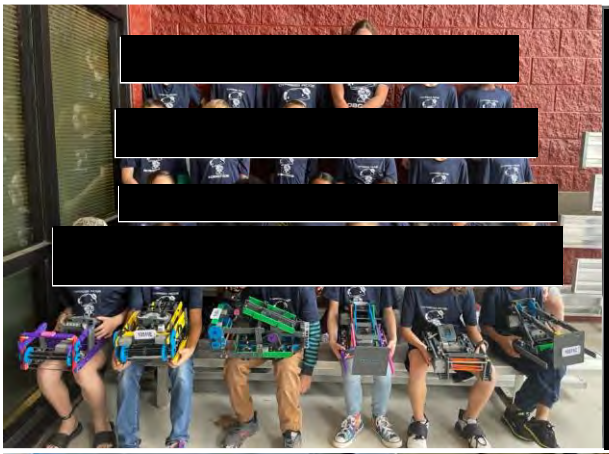
name [redacted] Kaitlyn W[redacted]

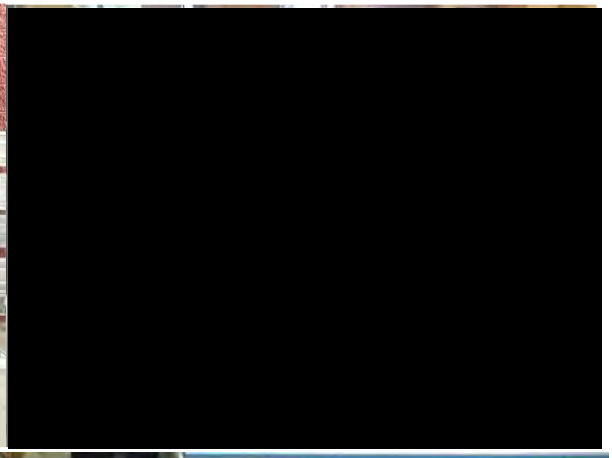
date 1/24/22 Zetabots

~~Today we a~~
Today we are practicing driving because to mallow is our state qualifying competition we are fixing the ~~gate~~ ~~back~~ because every time we hang ~~something different~~ the part that holds ~~the~~ the gate on falls off. We are fixing by taking the gate off and replacing the small shaft with a biger shaft to see if it will stabelize it and it worked. Now the gate will not even go up anymore so we are twicking it and we have to get another longer shaft. After A full 45 minutes

name ~~Hazel~~ Kaitlyn W
date 1/20/22 zetabots

VEX IQ





today we are driving drivi
driving because we have
another competition
this saturday at our school
we also got invited to
STATES!! yay!!
we are all exited.

name kaitlyn w
date 2/3/22 zetabots

vEx

Competition Notes

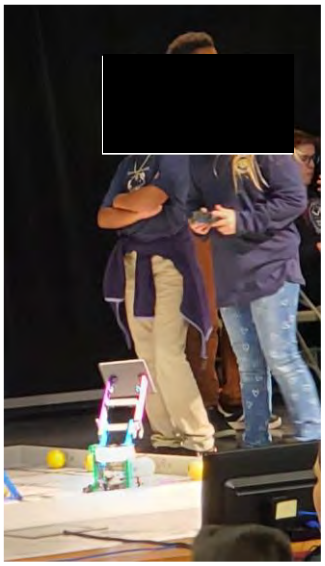
Competition Zeta bots

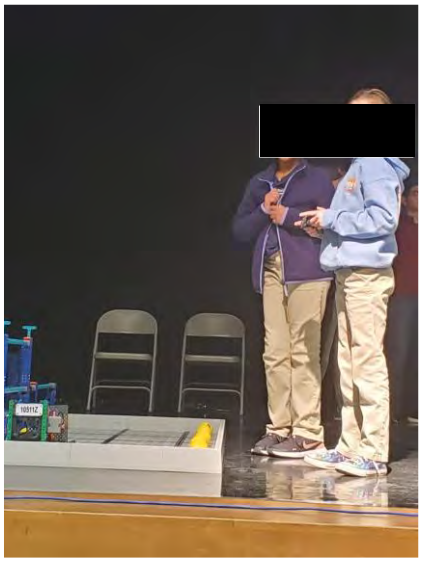
Drivers' Skills – 9th place

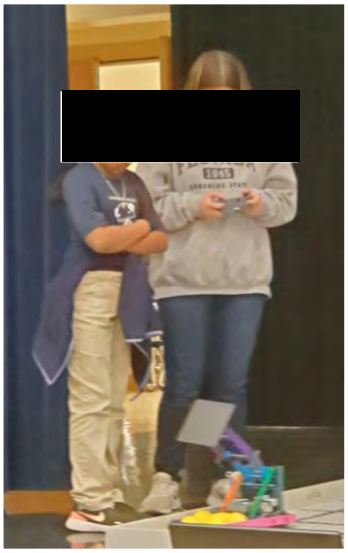
Date 1/29/22

Round	Score	Comments
1	17	we did a great job hanging and clearing the corral. we need to work on timing
2	17	same score we did amazing though we are aiming for better
3	21	we did good so close to do the hang. amazing

Round	Score	Comments
1	39	we did an amazing job
2	20	the gate fell off and we will leave it next time
3	27	we did great communicating. we need to work on turning.
4	94	we did good at clearing the corral we can work on pushing more balls in.
5	26	we did amazing next time we should be a little more speedy
6	26	we did great communicating we cleared corrals







Competition Notes

Competition The Jelly Jugglers

Drivers' Skills

Date 2-5-22

Round	Score	Comments
1	22	we did great communicating we also got a new plan that got us more points
2	17	We did good but we need to be quiker and more efficient
3	26	we did so good we cleared both corrals and got 5 balls in

VEX IQ CHALLENGE

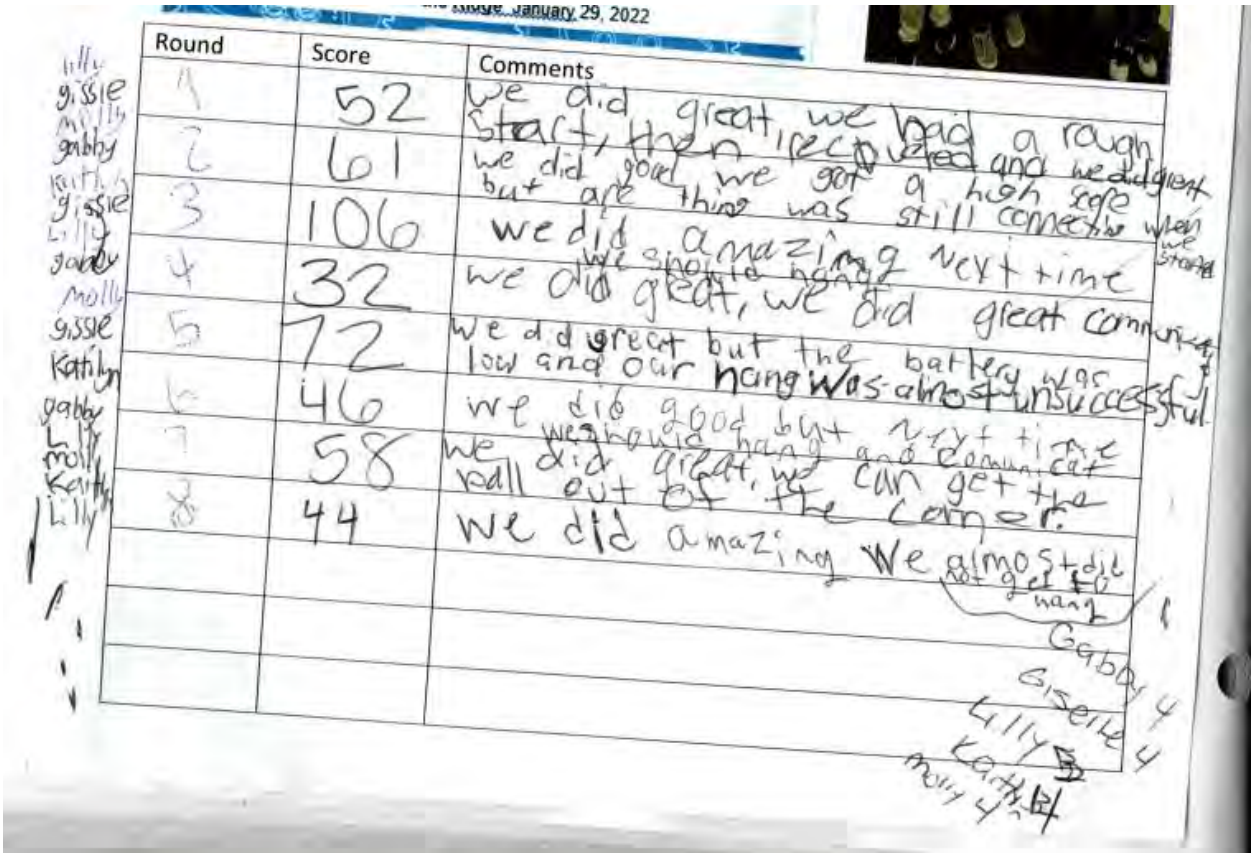
CREATE AWARD

TEAM 10511Z

Zeta Bots

[redacted] their efforts and accomplishments at the

Rumble on the Ridge January 29, 2022



January 29, 2022

Round	Score	Comments
1	52	we did great, we had a rough start, then recovered and we did great
2	61	we did good we got a high score but are thing was still connecting when we started
3	106	we did amazing next time we going to hang
4	32	we did great, we did great communicating
5	72	we did great but the battery was low and our hang was almost unsuccessful
6	46	we did good but next time we going to hang and communicat
7	58	we did great, we can get the ball out of the corner.
8	44	we did amazing We almost did not get to hang

Gabby 4
Giselle 4
Lilly 5
Kathy 4
Molly 4

"If at first you don't succeed, try, try, try again." — William Edward Hickson

32

We are learning how to program. So far we have cleared the corral. Now we are working on pushing the balls. Next we will program it to hang. We got under the bar so we will push the balls into the goal now.

We are trying to build a support beam to support the gate so it dosen't fall off mid-competition. And it worked.

[redacted]

name Gabriela R[redacted]

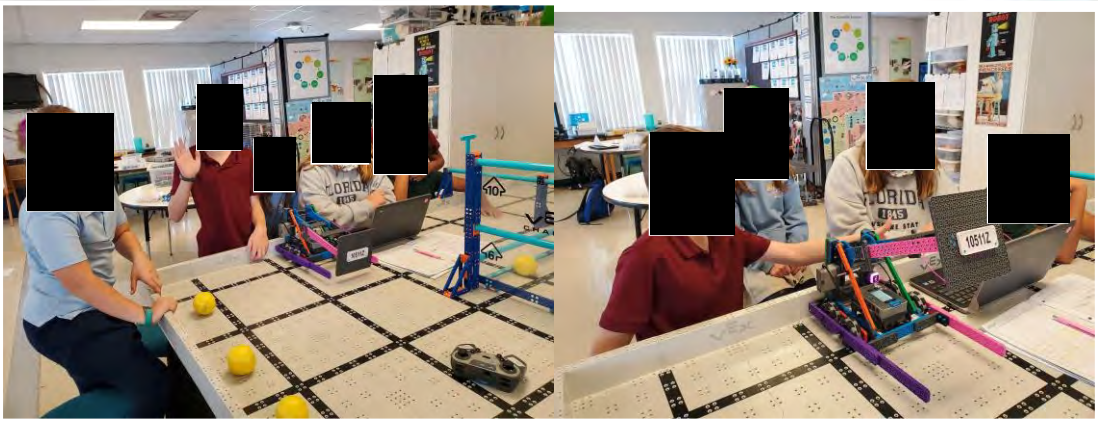
date 2/9/22

Today we are making our program to hang. After we finish that, we will be driving for the competition this weekend. We did great with programmi

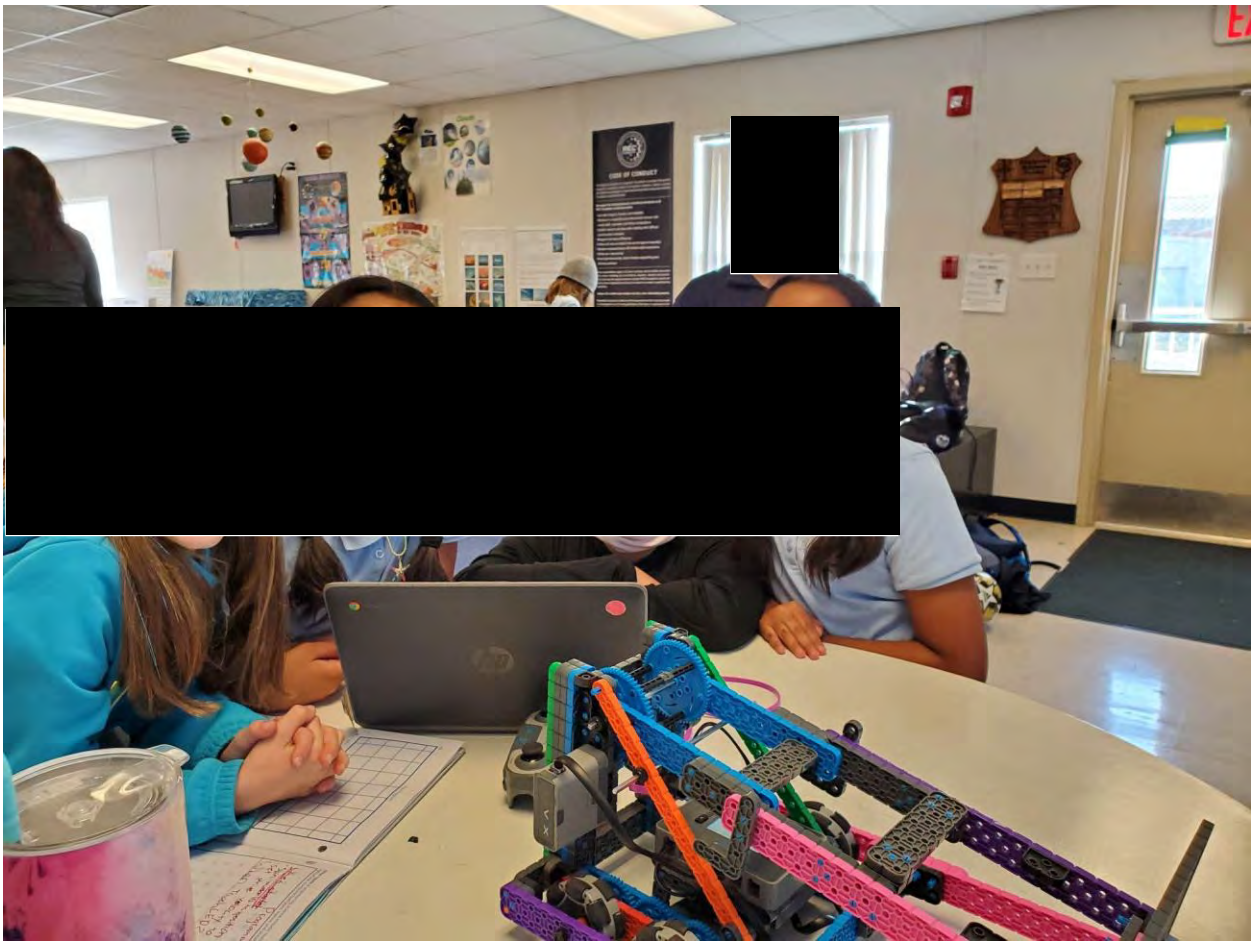
Name Lilly M

Date 2-10-22

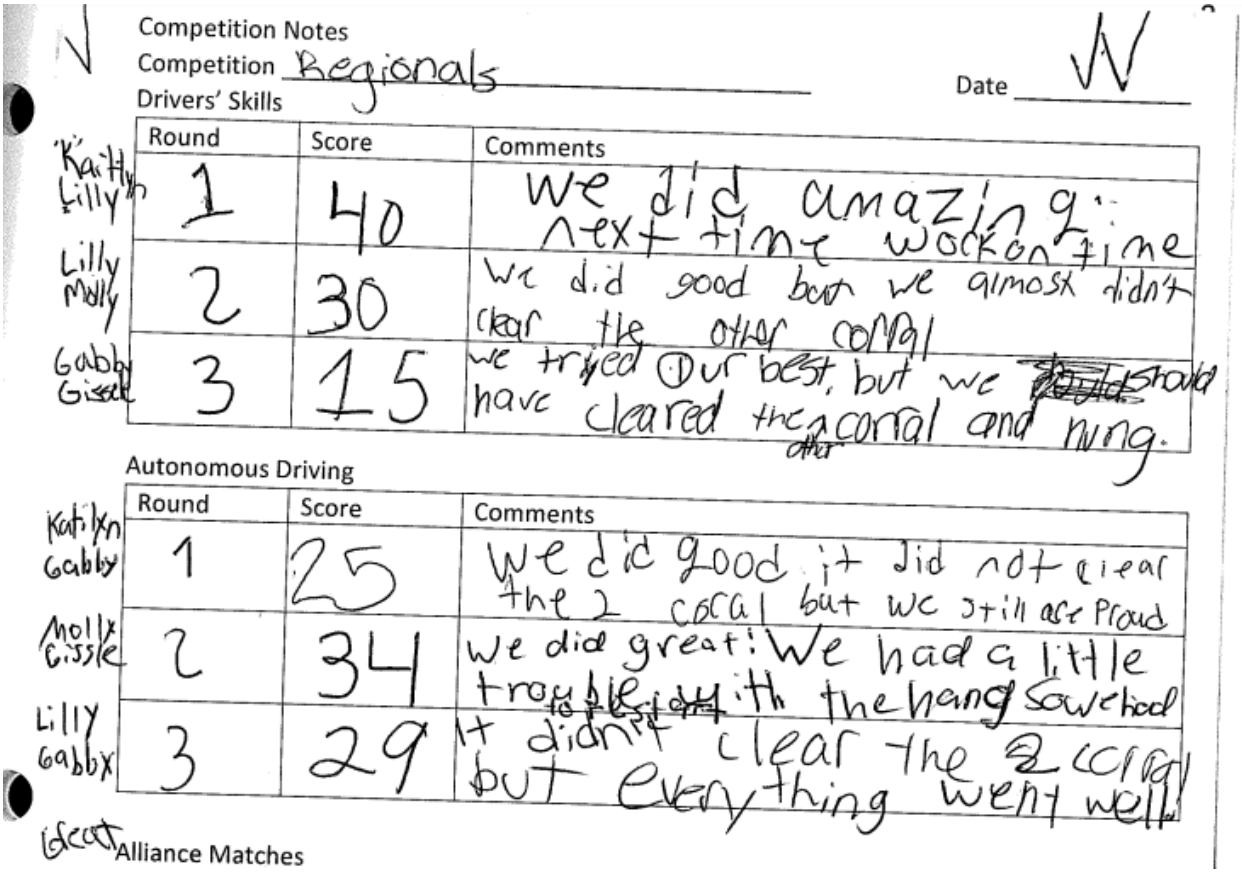
VEX IQ



A programmer from another team really taught us a lot today.



NORTH FLORIDA REGIONAL CHAMPIONSHIP
FEB. 26, 2022



Competition Notes

Competition Regionals Date

Drivers' Skills

	Round	Score	Comments
Kaitlyn Lilly	1	40	We did amazing. next time we can do even better
Lilly Molly	2	30	We did good but we almost didn't clear the other corral
Gabby Gissel	3	15	We tried our best, but we should have cleared the other corral and ring.

Autonomous Driving

	Round	Score	Comments
Katilyn Gabby	1	25	We did good it did not clear the 2 corral but we still are Proud
Molly Gissle	2	34	We did great! We had a little trouble to start with the hang Sawhead
Lilly Gabby	3	29	It didn't clear the 2 corral but everything went well!

Alliance Matches

Alliance Matches

Lilix
Gabby
Molly
Gissle
Kaitlyn
Gabby
Lilix
Gissle
Molly
Gabby
Kaitlyn
Gissle
Kaitlyn
Lily
Molly
Kaitlyn

Round	Score	Comments
1 Q14	48	F 54705A
2 Q30	33	832004 W
3 Q41	80	63761B we did really good the other team did well as well
4 Q[illegible]	42 33800	D
5 Q81	32 331C	
17 6 Q97	38 (Y) 63	61 F.
7 Q109	68	(6) 91754A
8 Q138	100	(3) 94537X

54705B

Gabby - 4
Gisselle -4
Molly -3
Lily- 5
Kaitlyn- 3

☐ Test

We Did So amazing and had a great time at States it was the best we got 8th but it was still really good we are going to worlds we got the judges award.

Today we are just practicing interviews

name Molly H

date 3-3-22

VEX IQ

VEX IQ CHALLENGE

PITCHING IN

JUDGES AWARD

is presented to

TEAM 10511Z

Zetabots

recognizing their efforts and accomplishments at the

North/ Central Florida Championship February 26, 2022

we D.d so amazing and had a great time at States it was the best we got 8th but it was still really good we are going to worlds we got the Judges award.

Today we are just practicing interviews

name Molly H

date 3-3-22

VEX IQ

☐ Think how to make it work
☐ Do build robot
☐ Test driving

We started building our robot. We realised it was wider because we added a chain. Which means we may have to change our program. We checked to see if it was too wide, but it fit in the area. We now moved to monday and wednesday. our practices our new gear ratio, we used the smallest gears on the wheels and the medium sized gears for the motor. We have noticed a drastic change in the speed.

name Lillyan

date 4-7-2

VEX IQ

Keep your parts organized. It will save time when you are building!

We Uploaded the programs today and finished building our robot today. We added a shaft collar to the gate motor shaft, we added extra pegs for support. we are anticipating that weare going to have to adjast the program Length because our robot is faster!

name ~~Kaitlyn~~ Kaitlyn W

date 4/7/22

VEX IQ

Today we are practicing ~~driving~~ driving our new robot for world's. We had a slower robot before but now the velocity is a lot faster. Now we have to put in 110% effort to be able to do our best at worlds. Worlds is our top priority. We robot is working very well and can hardly amazing I think our robot is complete.

name Gabriela R

date 4/13/2022

VEX IQ