

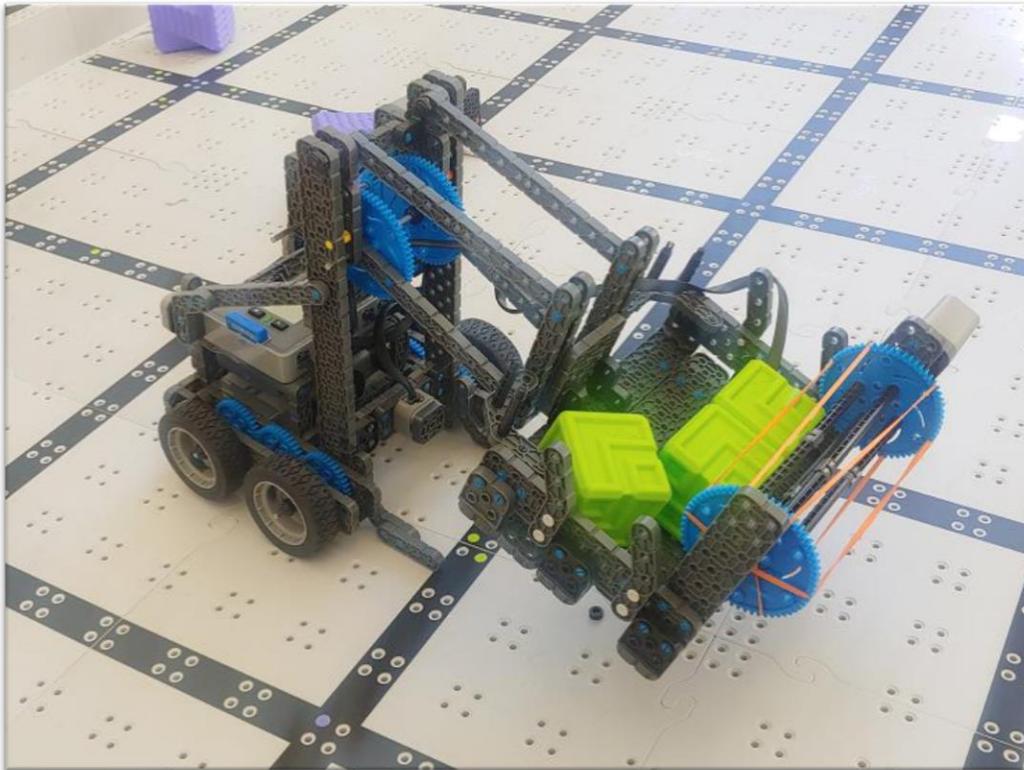
WELCOME TO

VEX IQ[®]
ROBOTICS

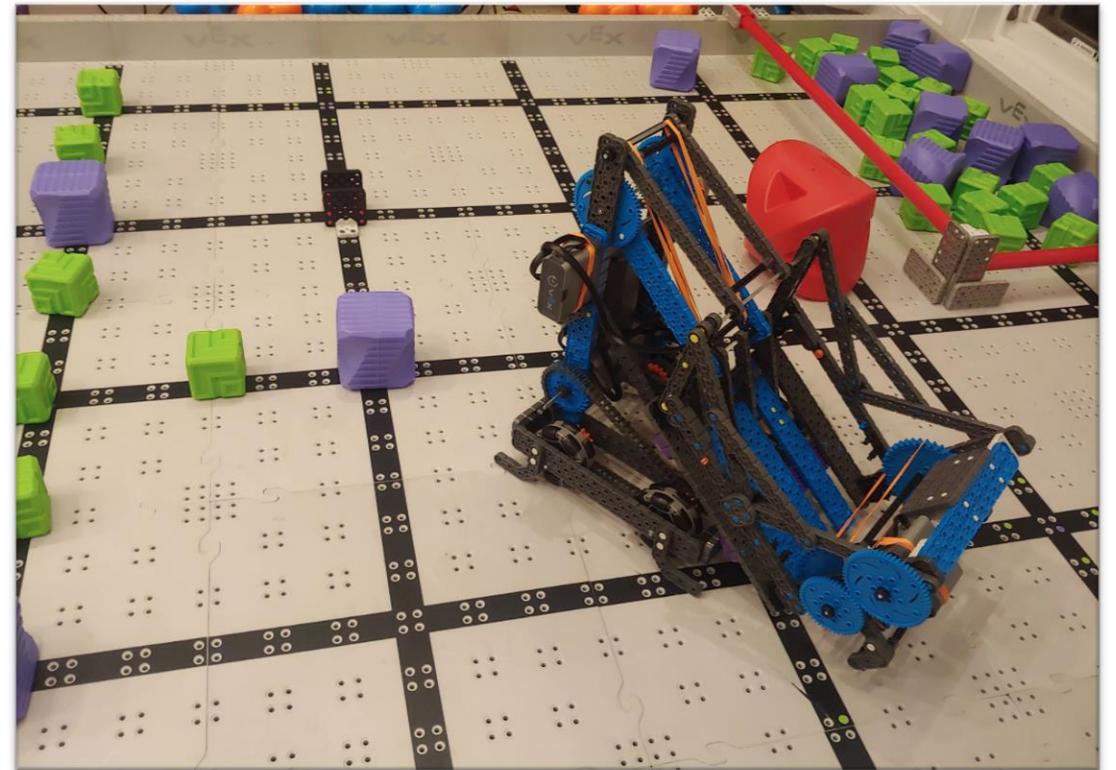
MASTERS

What next after level 1?

Super-Linq?

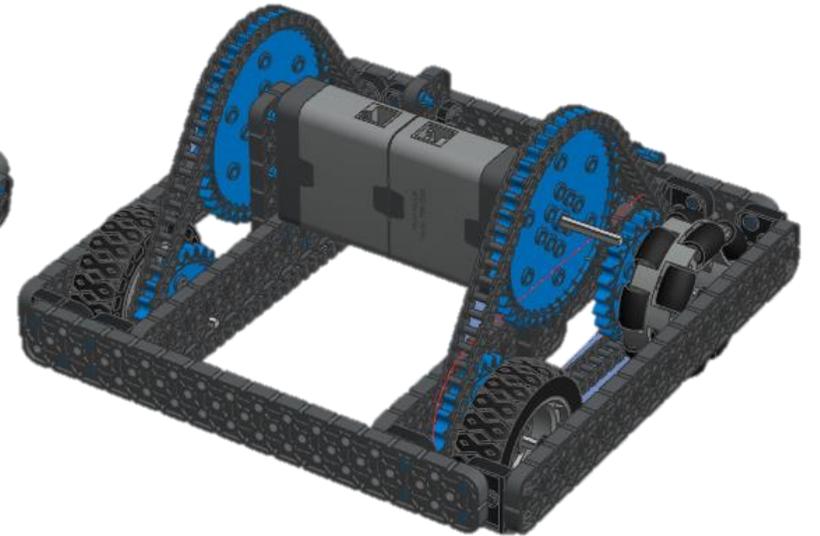
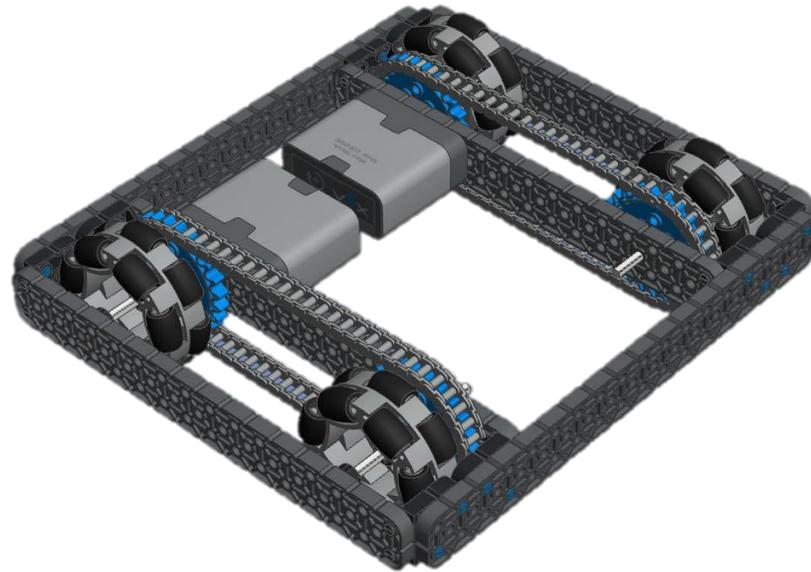
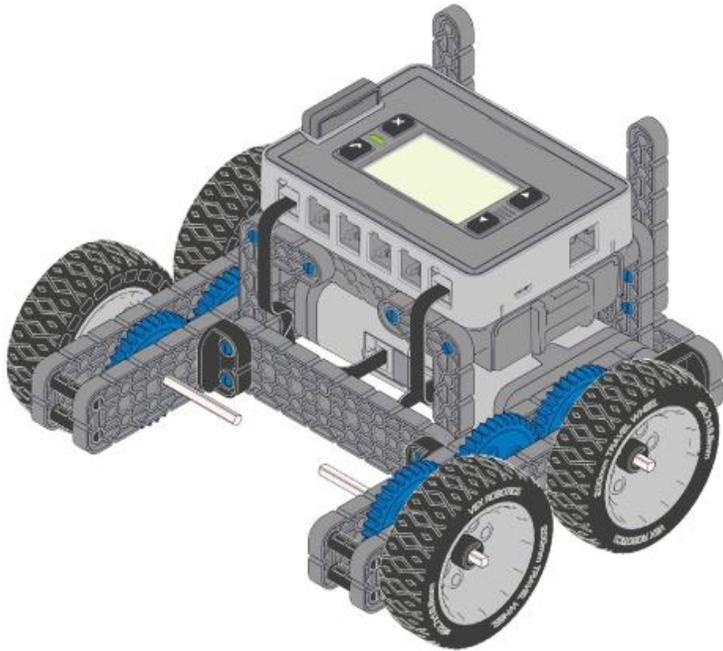


Something More?

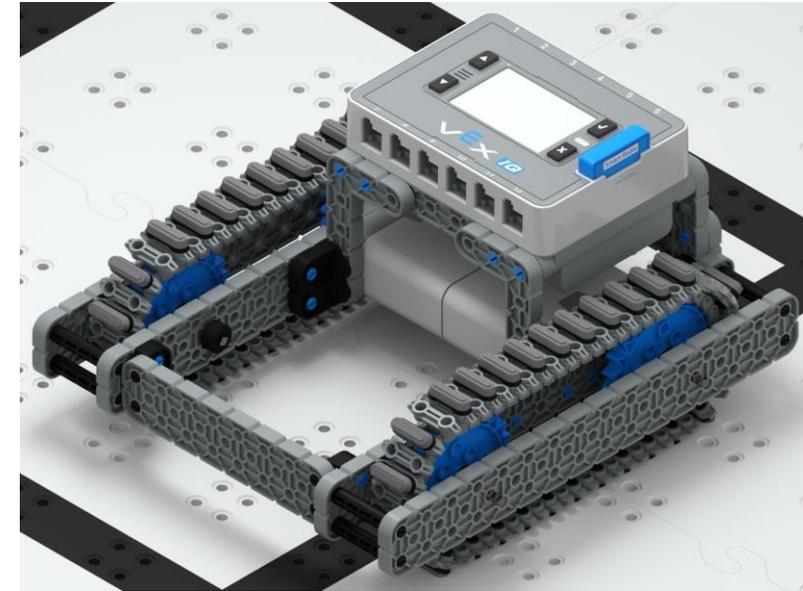
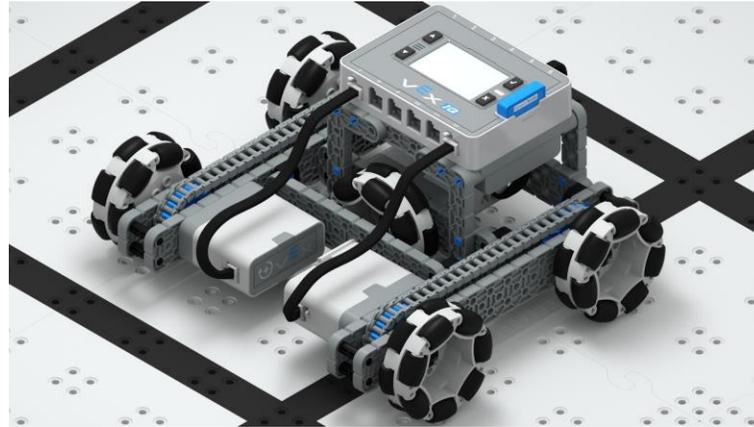


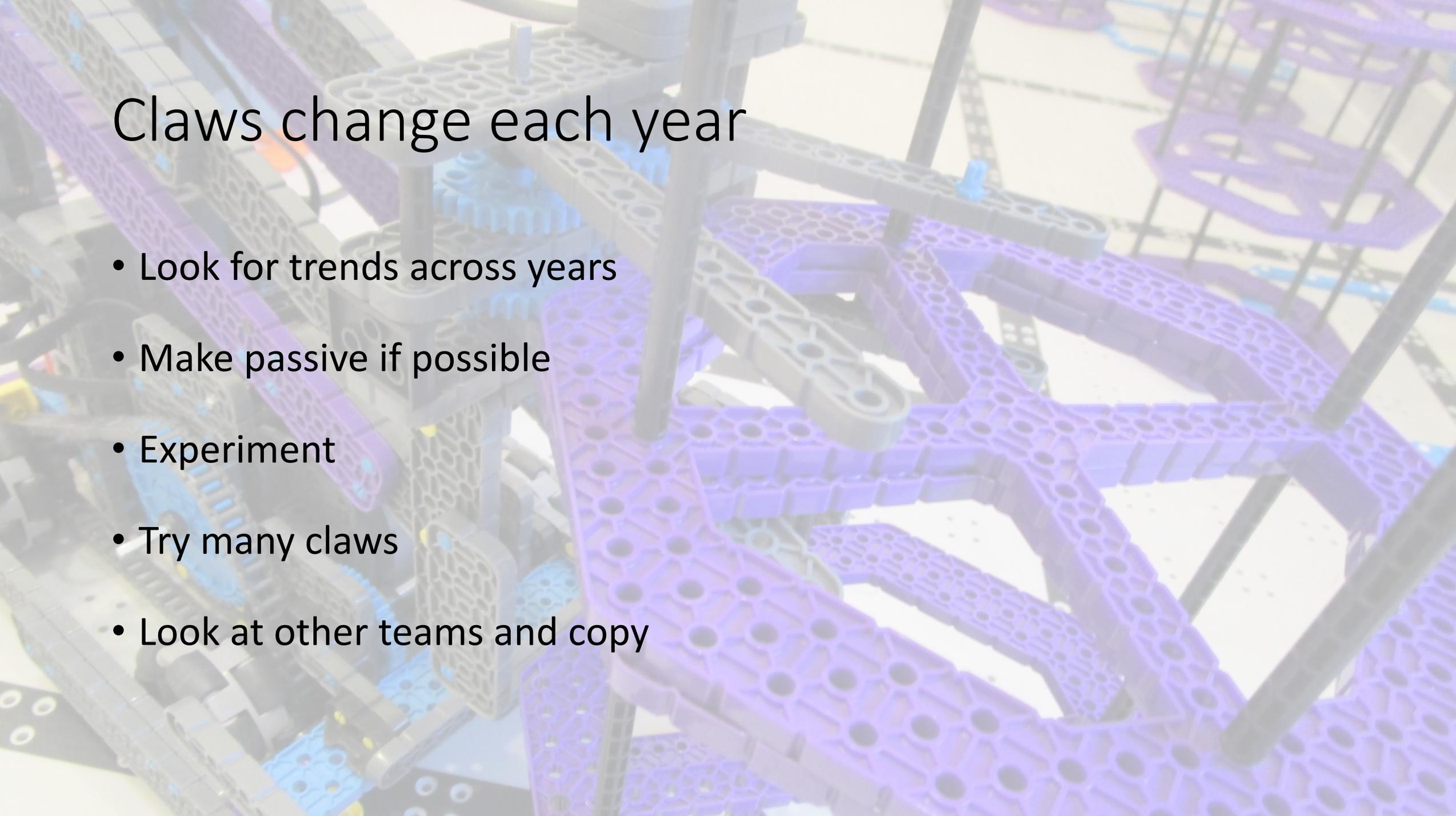
Let's sketch some more!

Adding a drivetrain to Linq



Adding an advanced drivetrain

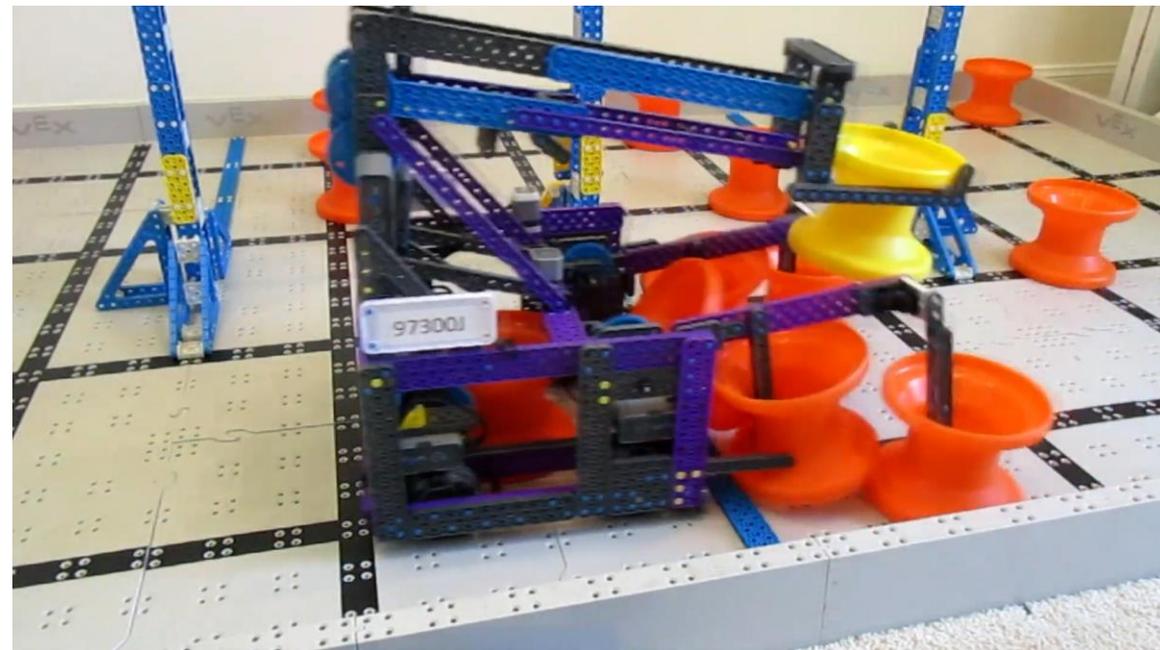
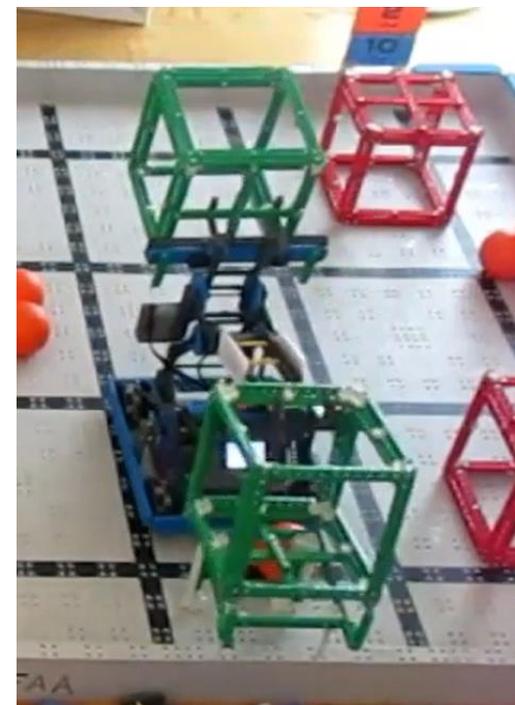
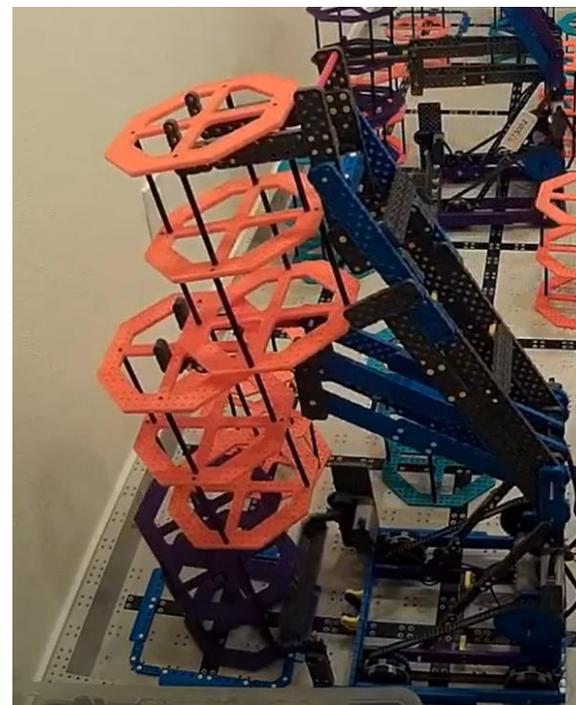
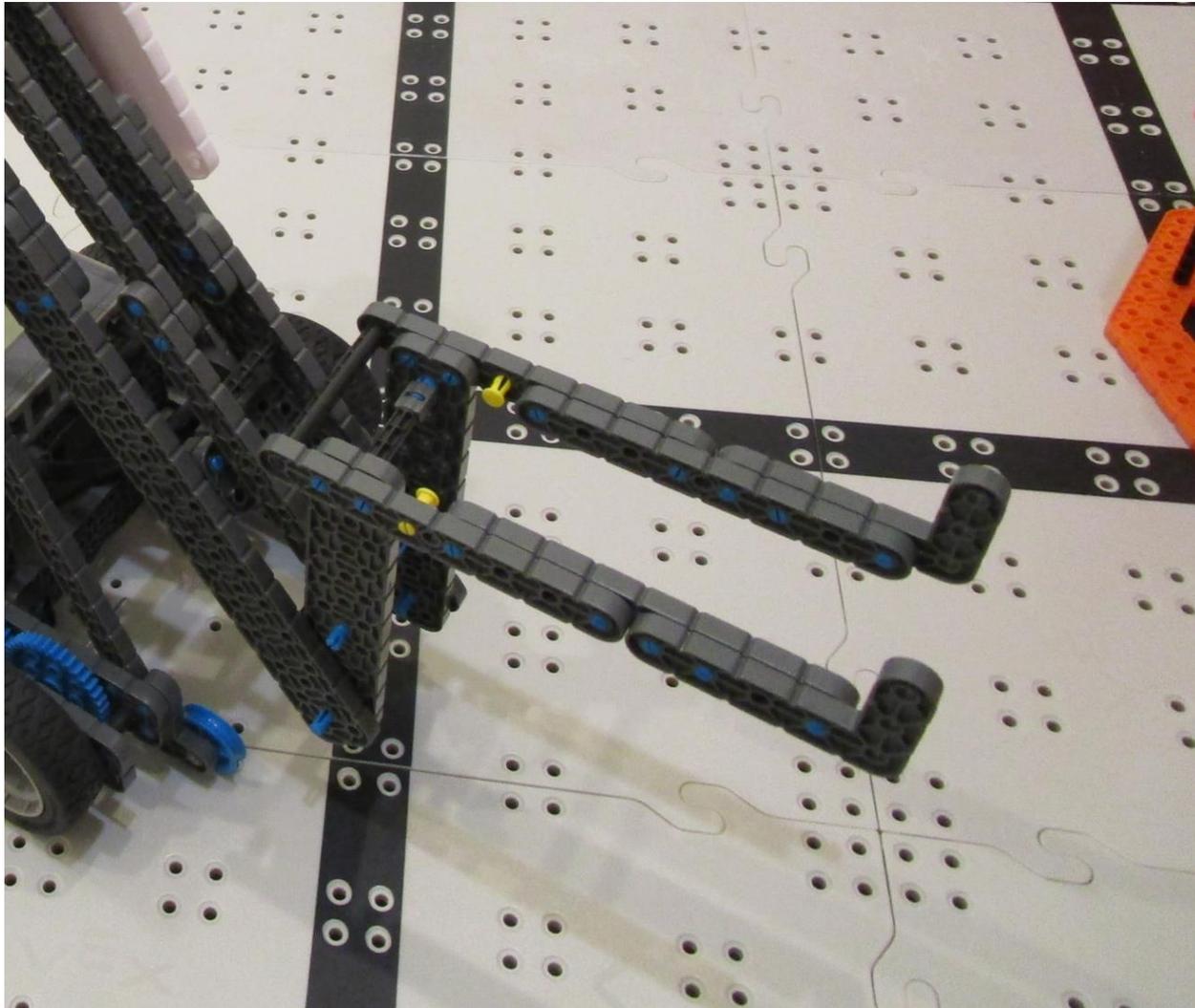




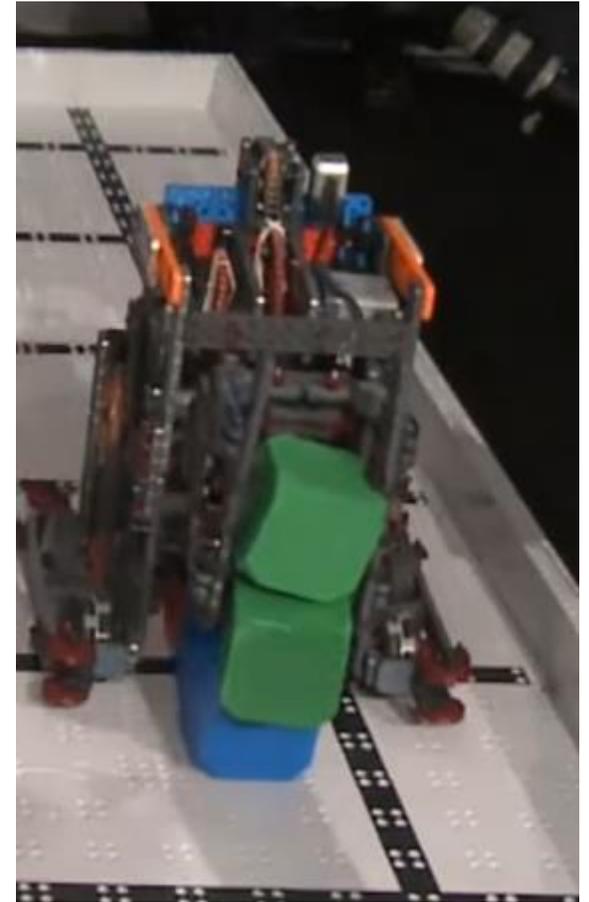
Claws change each year

- Look for trends across years
- Make passive if possible
- Experiment
- Try many claws
- Look at other teams and copy

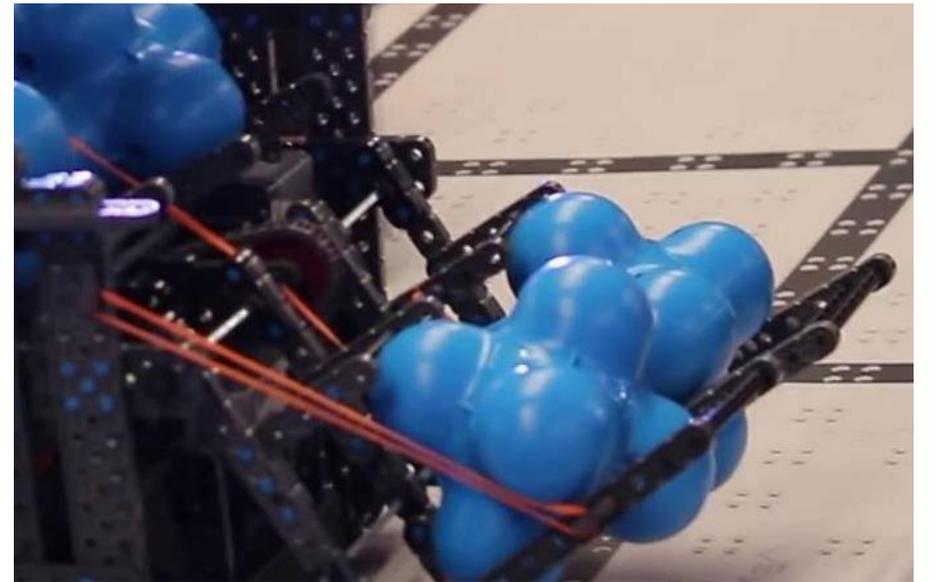
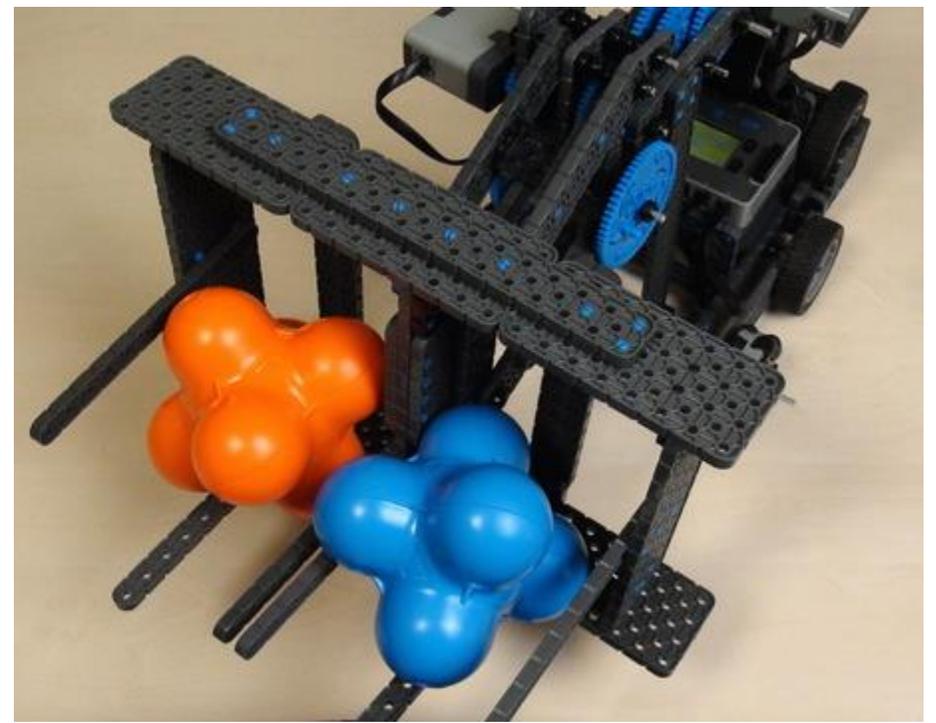
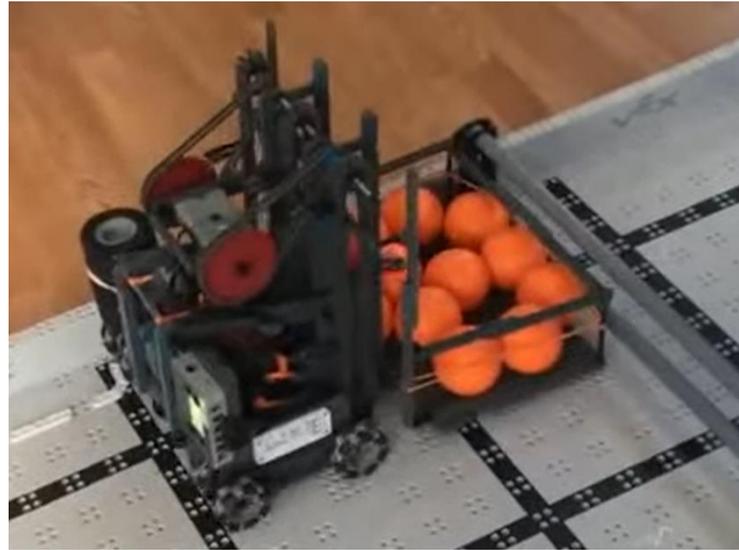
Claw types - Fork



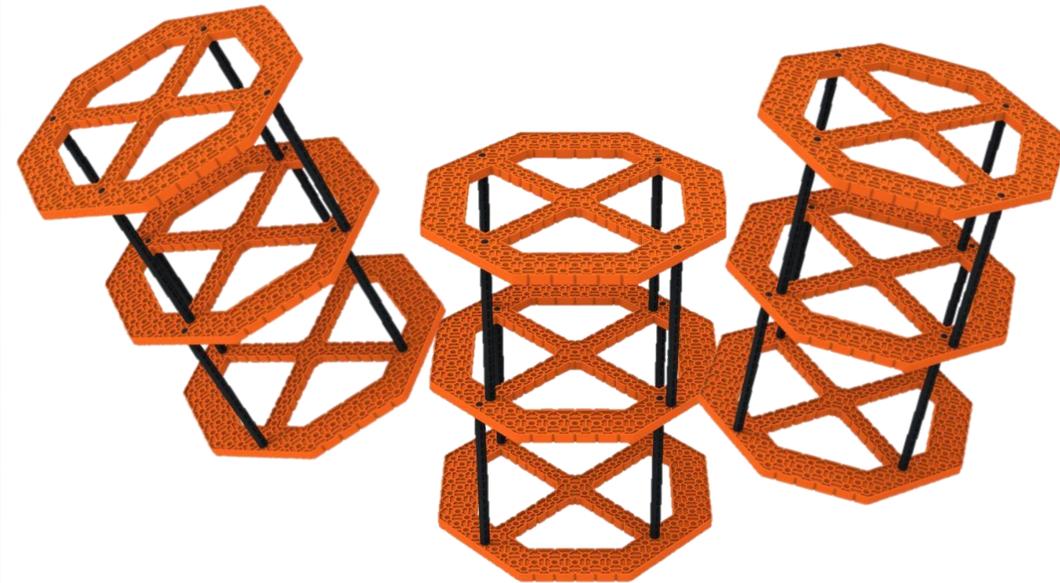
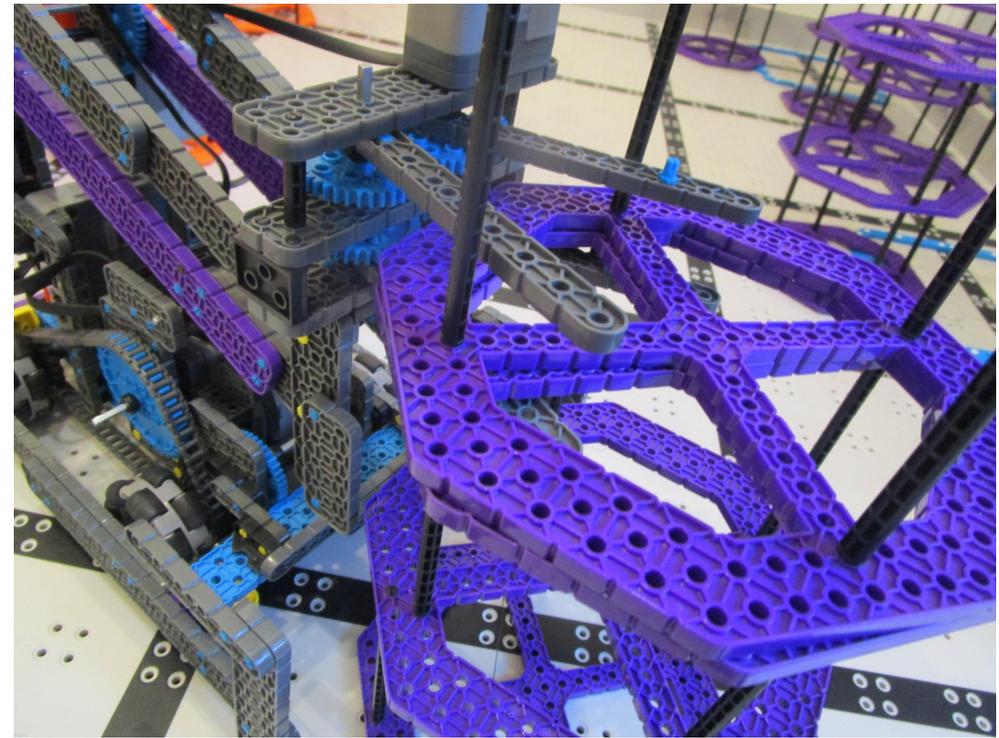
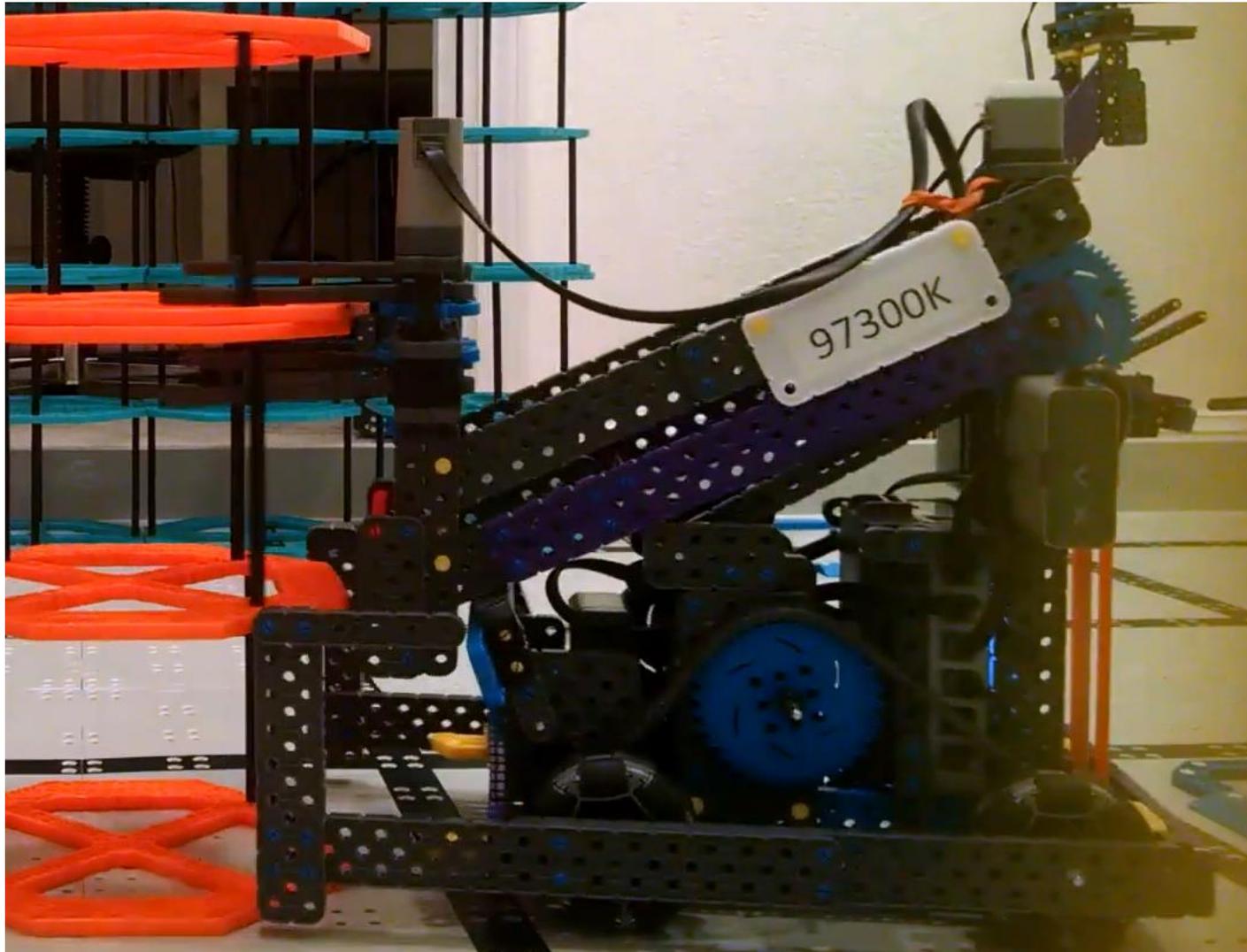
Claw types – gripper



Claw types – Tray/Spatula



Claw types – Inside out



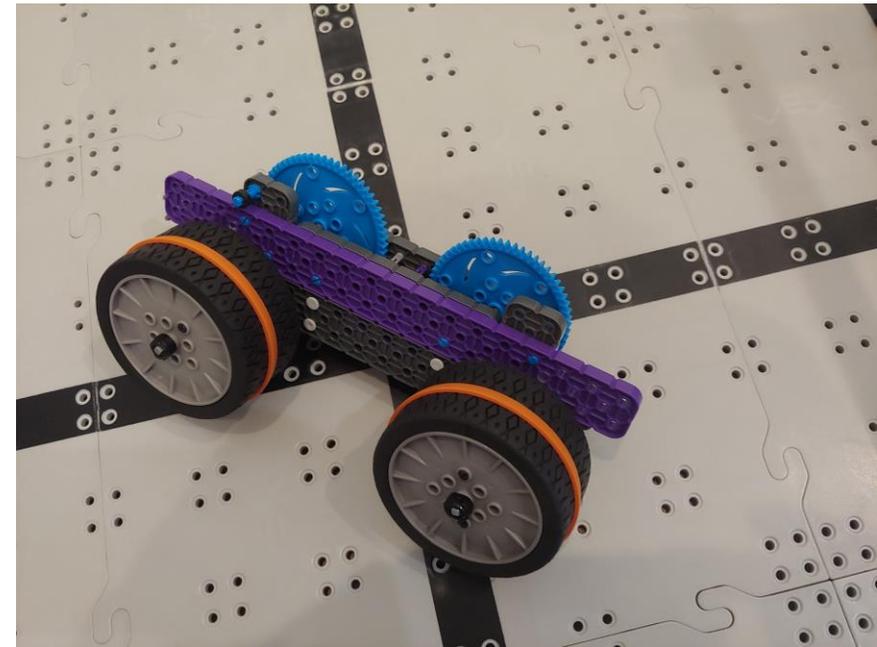
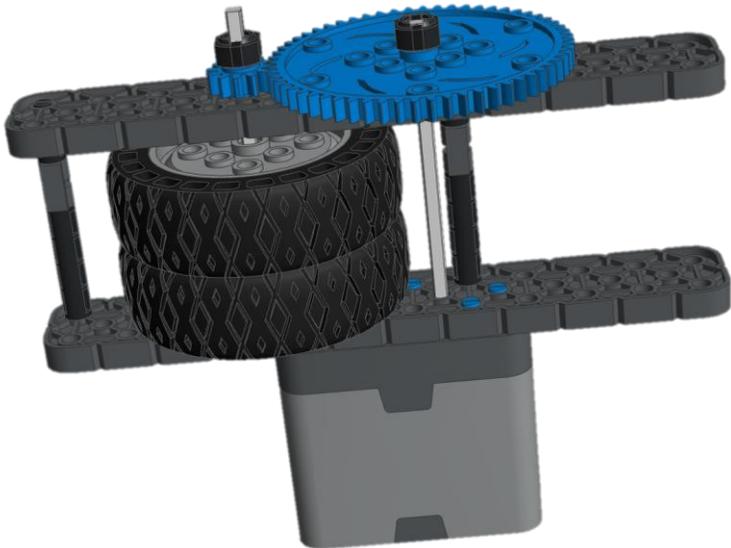
Where does energy come from (in VEX IQ)?

- **Chemical (Battery)**
- Angular Kinetic (flywheels)
- Elastics (rubber bands, springs?)



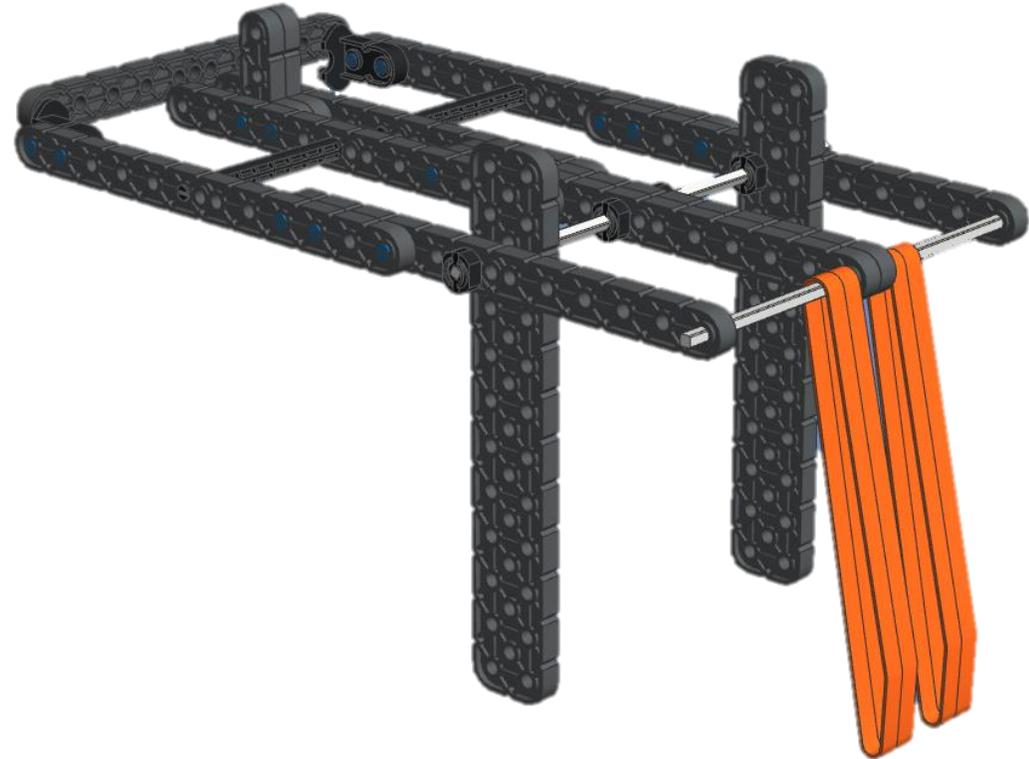
Flywheels – Key Points

- Flywheel must be Heavy & Fast – this is energy!
- Can be single or double flywheel
- Use compound gear ratios



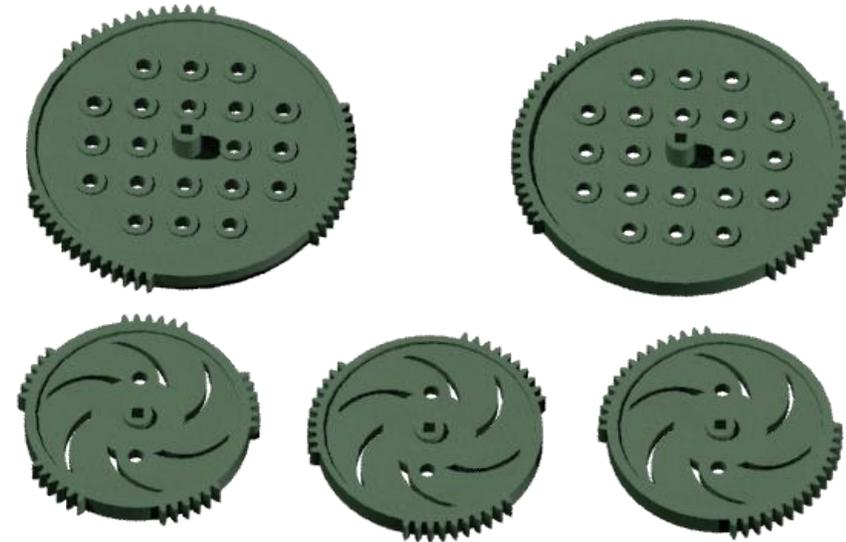
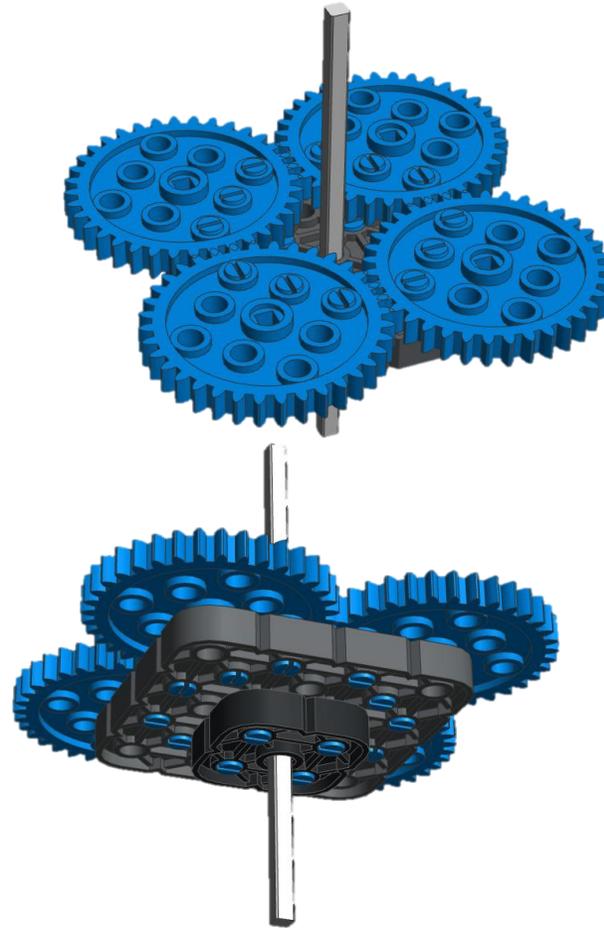
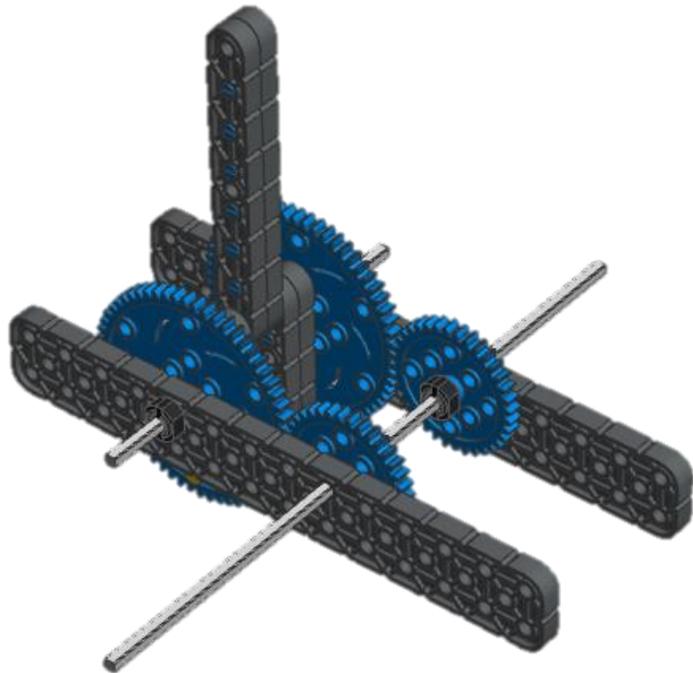
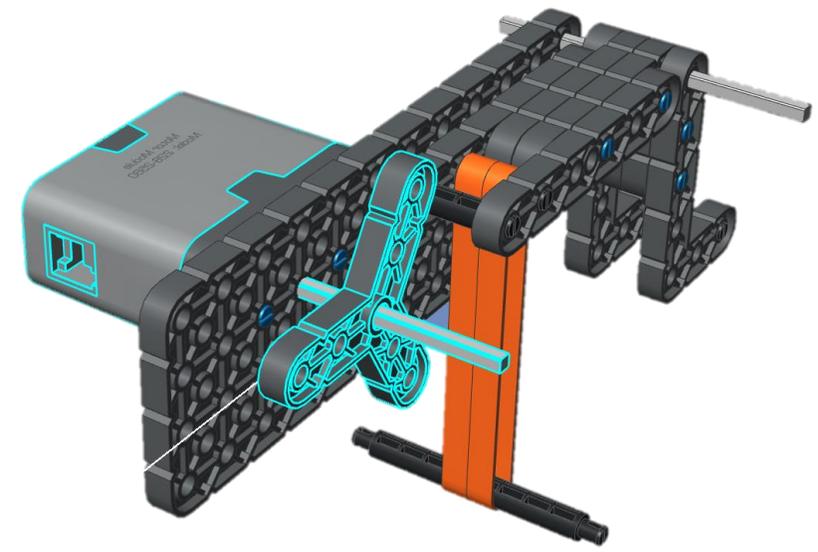
Rubber-band arms

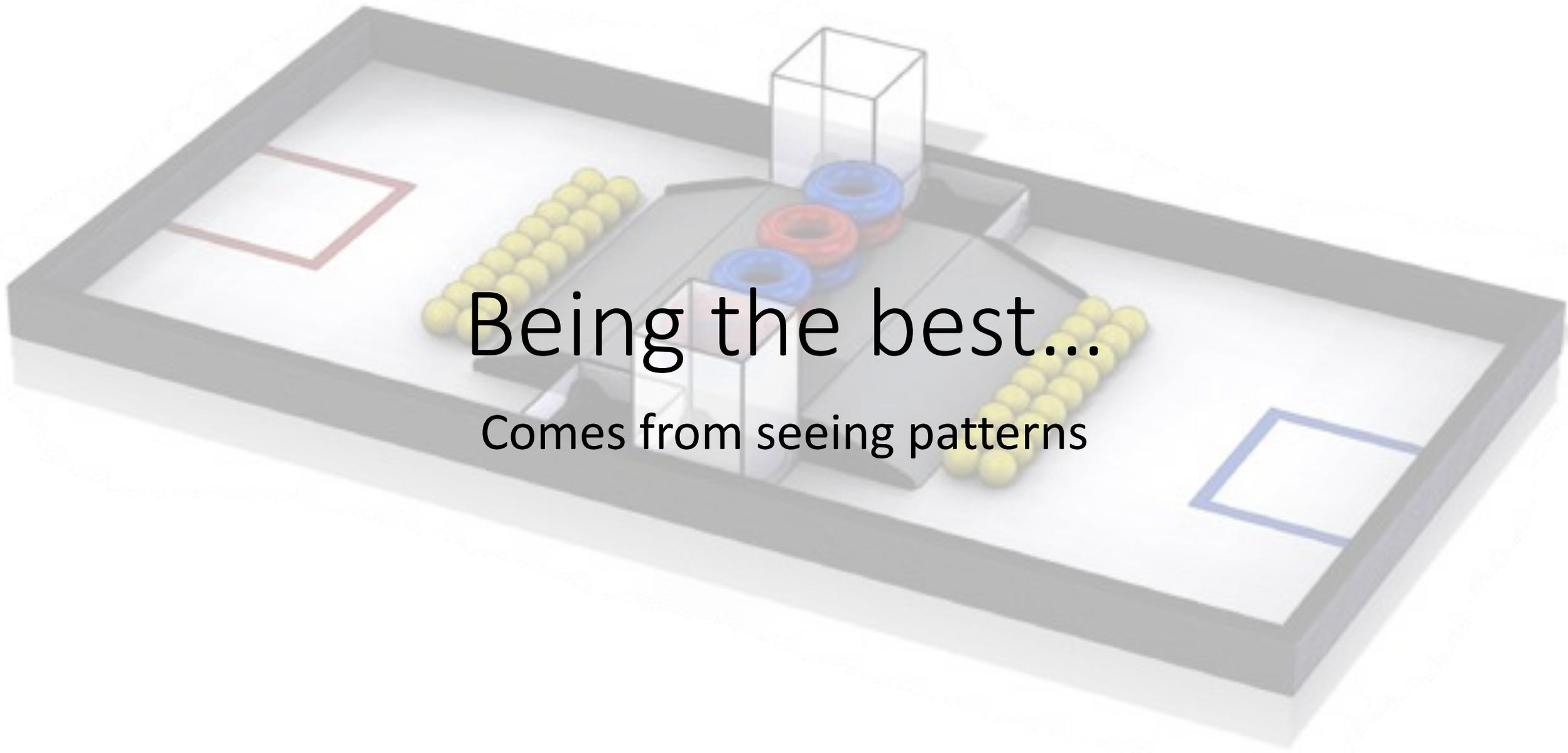
- Single-jointed arms (usually)
- Pulled one direction by a motor
- Released and “shot” with rubber bands



Pull-back-and-release

- Simple star spinner
- Choo-Choo
- Slip-gear





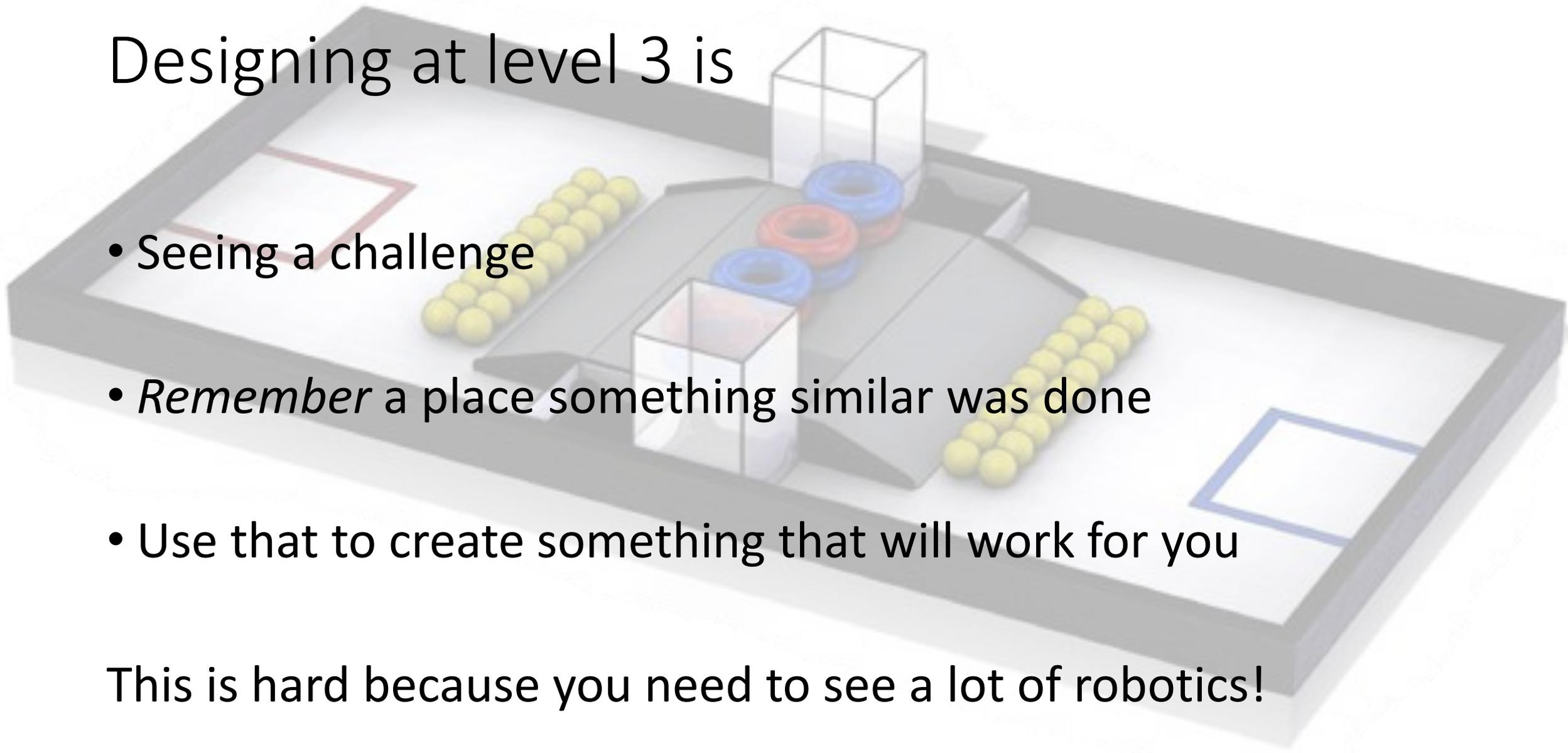
Being the best...

Comes from seeing patterns

Designing at level 3 is

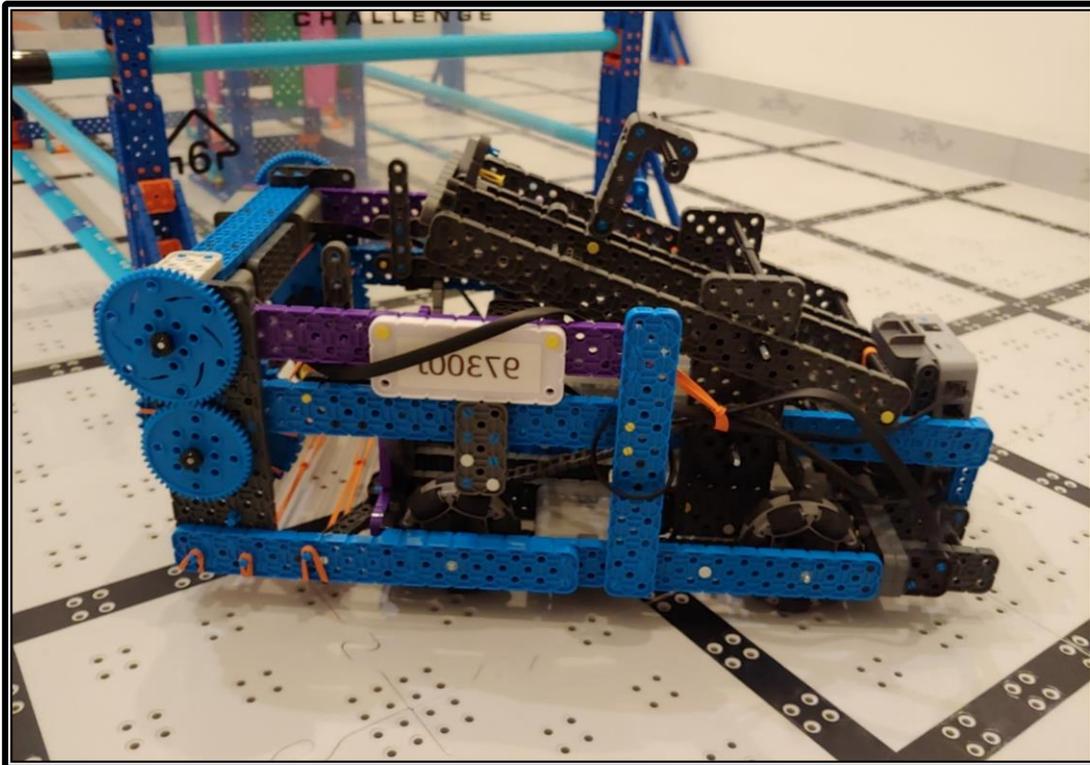
- Seeing a challenge
- *Remember* a place something similar was done
- Use that to create something that will work for you

This is hard because you need to see a lot of robotics!

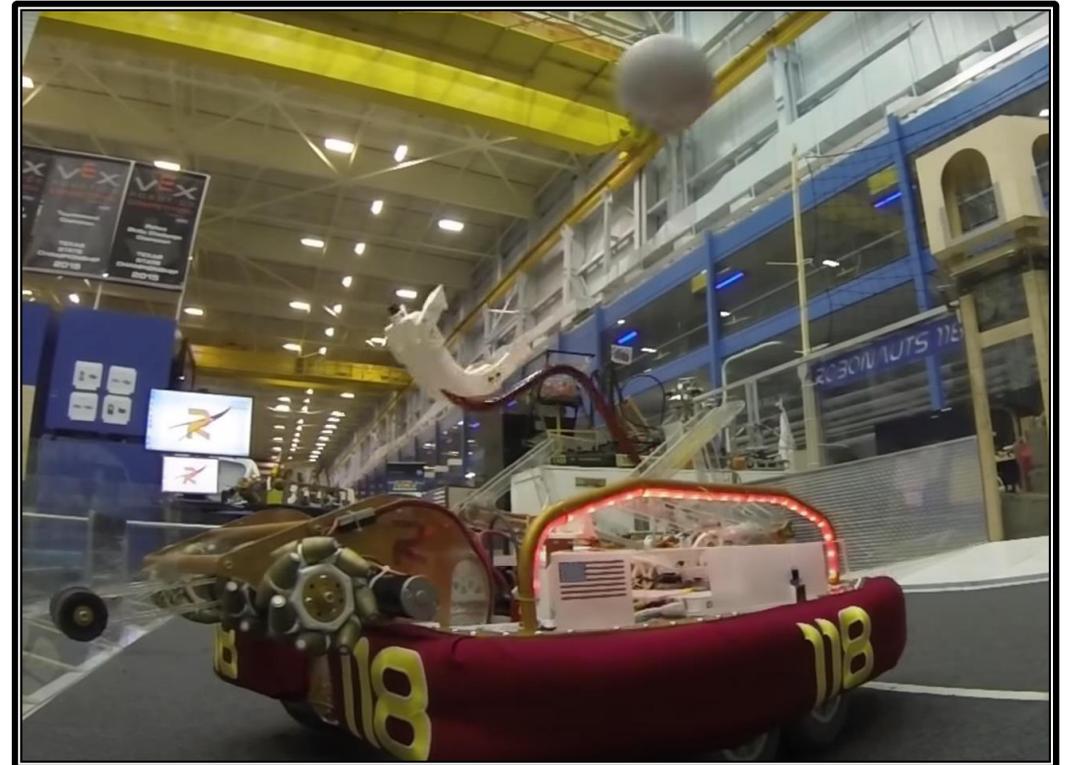


Some examples...

Shooters in pitching in

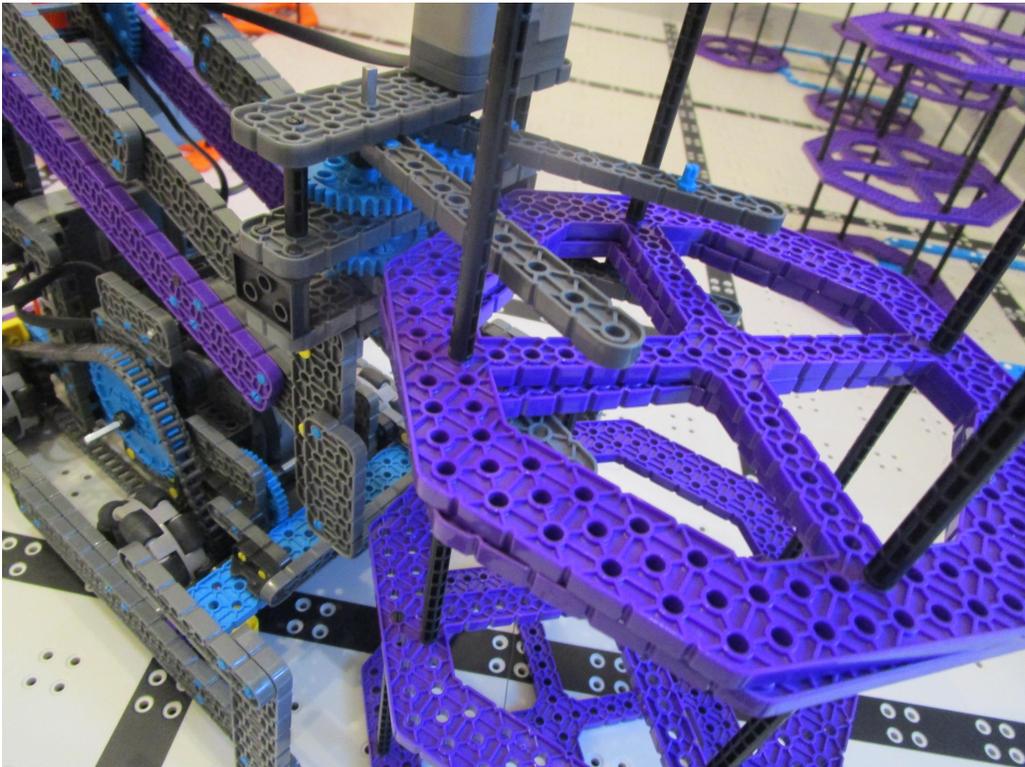


From shooters in FRC



Some examples...

“Razorbill” Claw

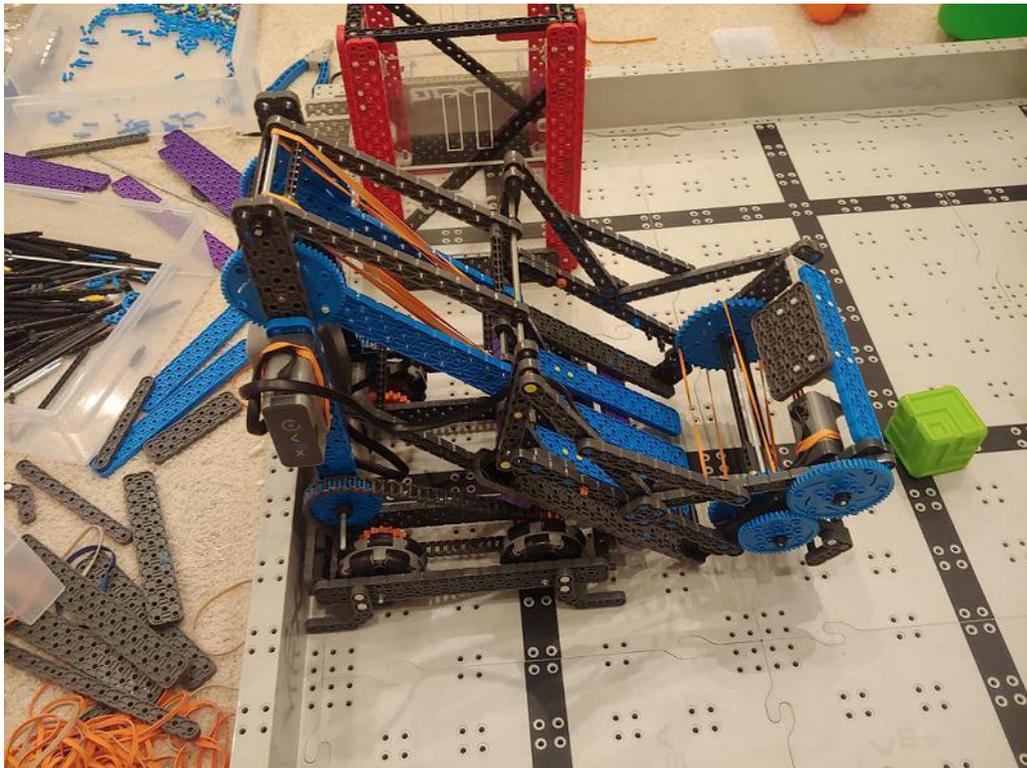


From Camelots!



Some examples...

Blockbuster

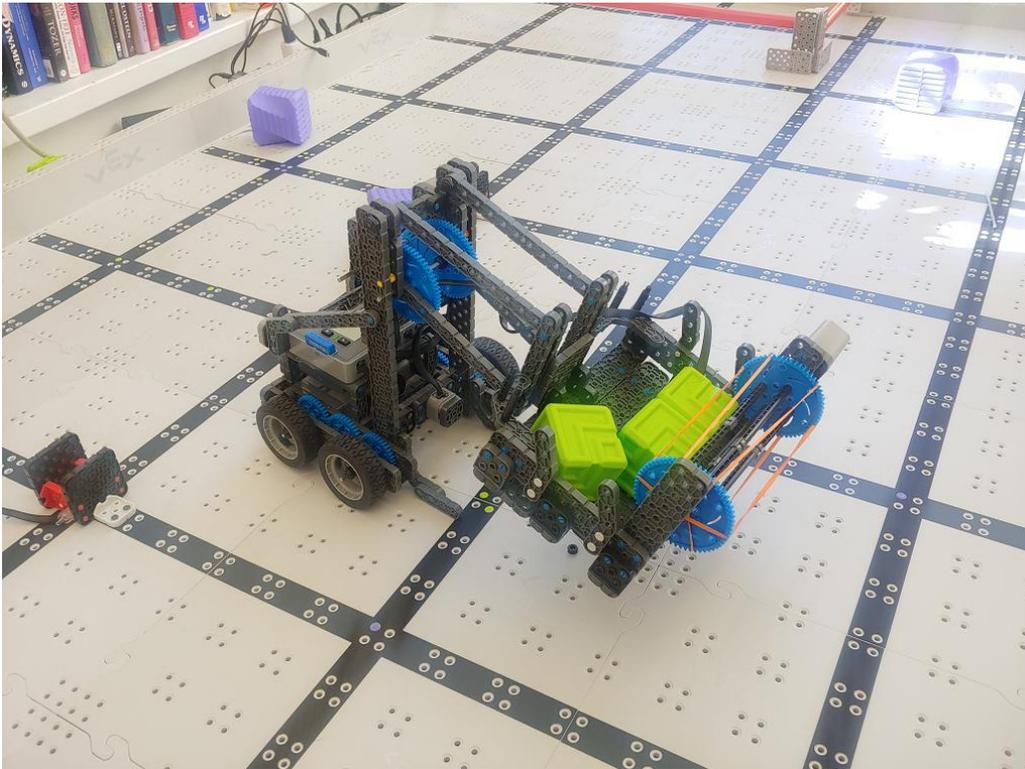


From Add It Up!



Some examples...

To Super-Linq!



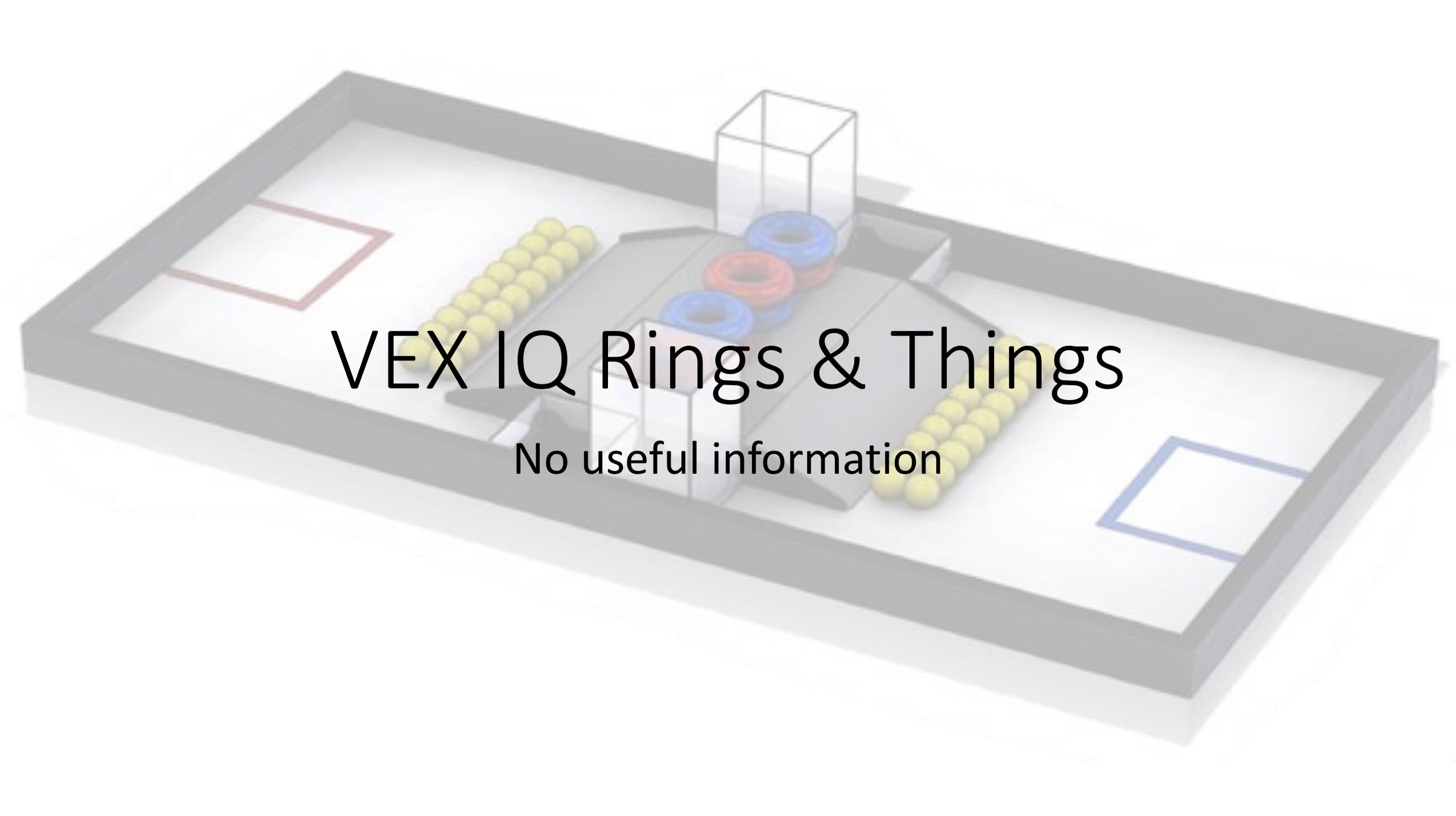
Basic “Linq” from Crossover





VEX IQ HISTORY

Going back to the beginning of time...



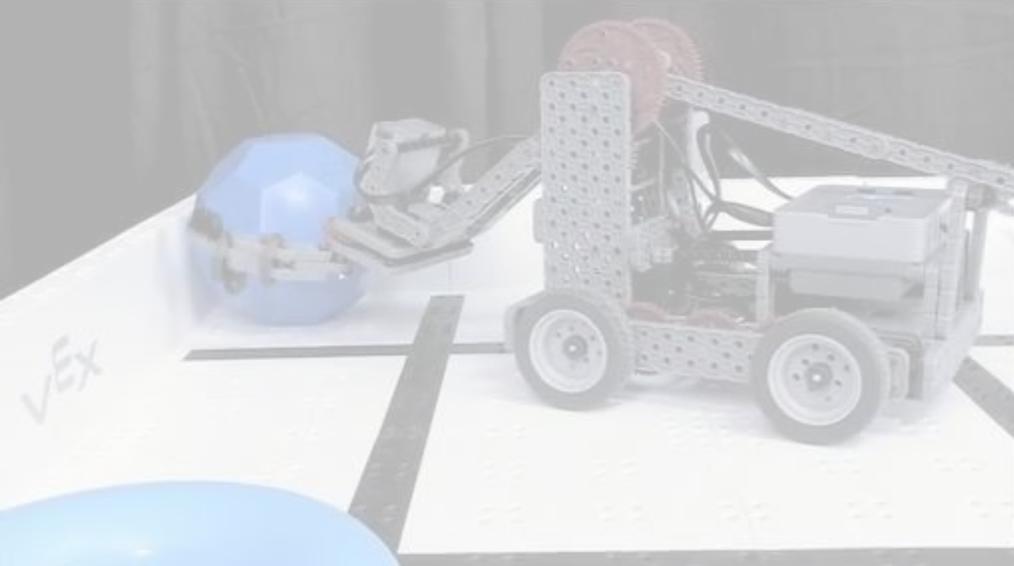
VEX IQ Rings & Things

No useful information



VEX IQ Add It Up

Old, but still some good stuff

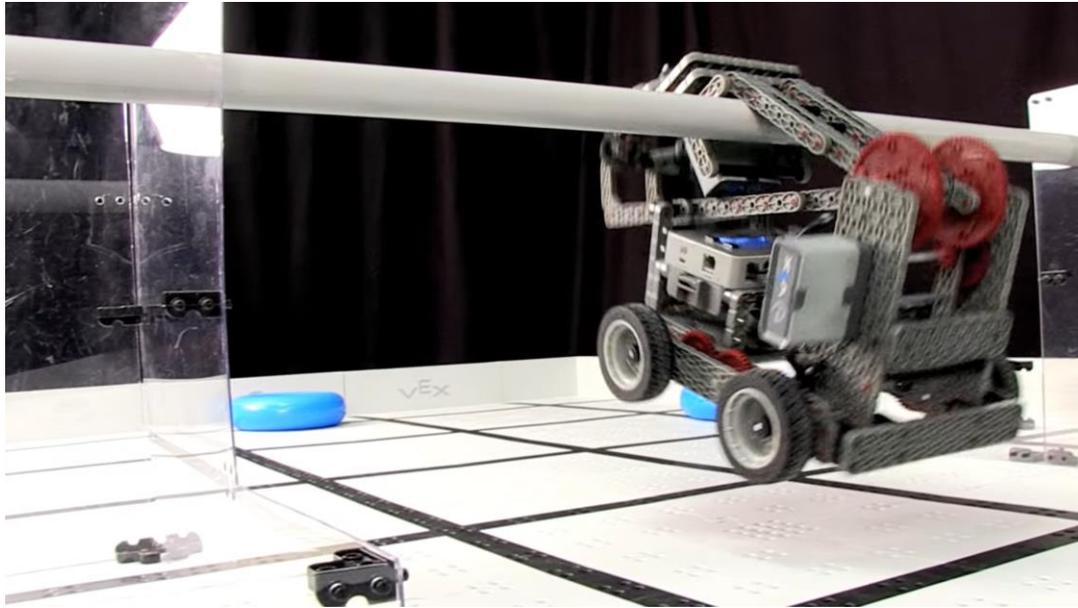


Total Score

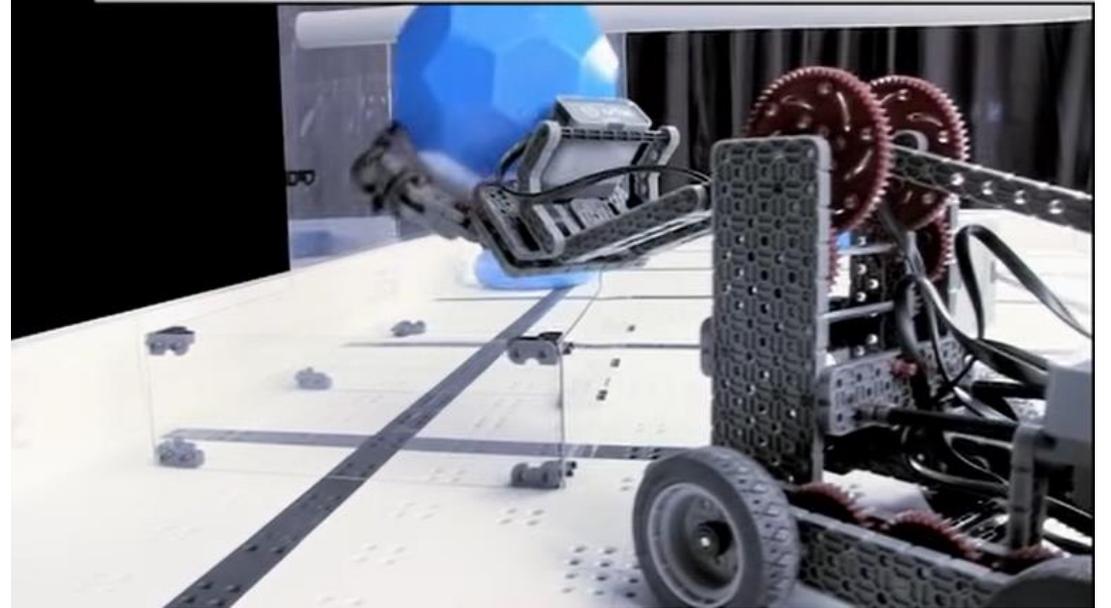
22

VEX IQ Add It Up

Hanging



Scoring lots of game pieces in a tall goal



The best Add It Up Match

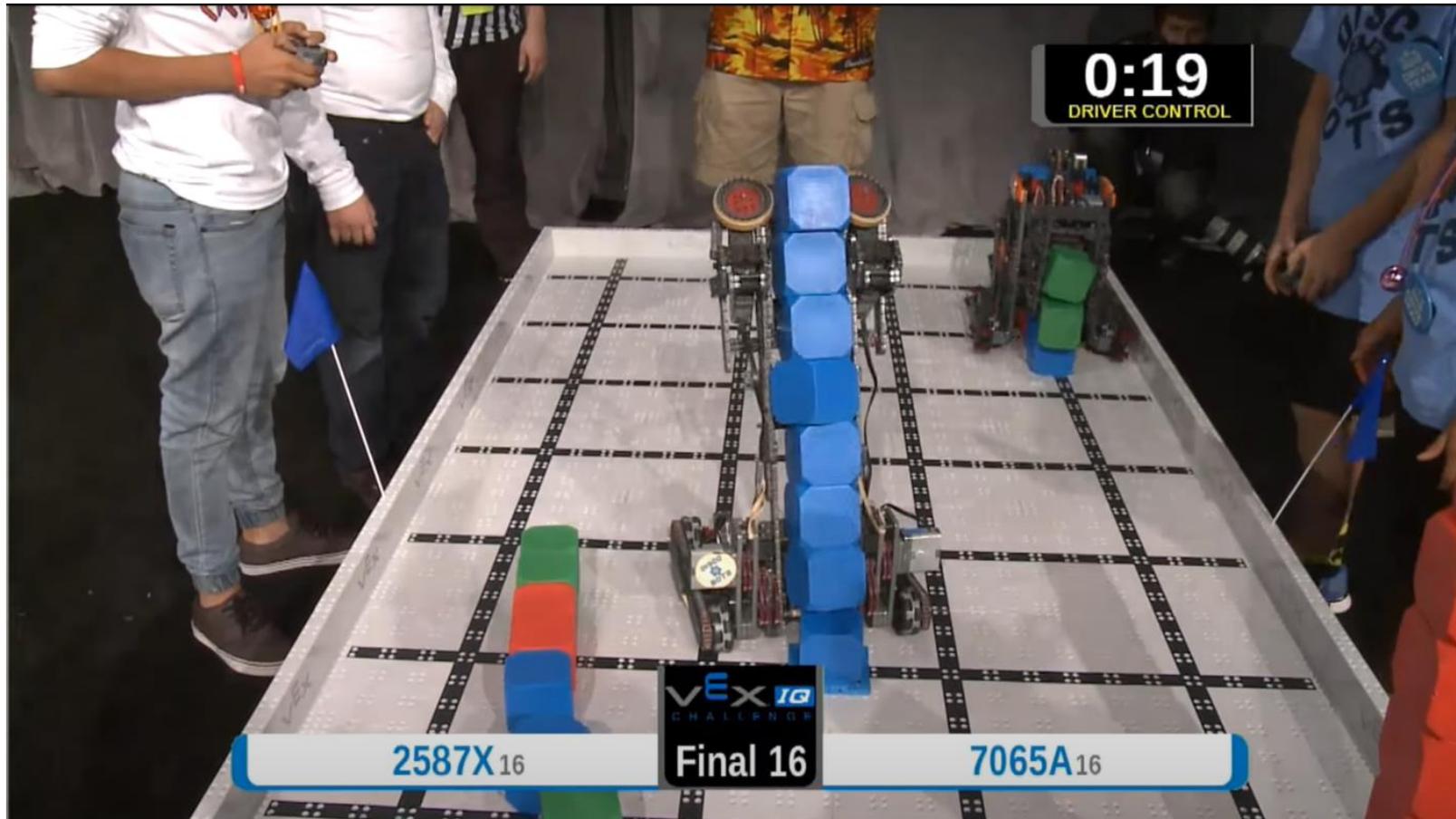




VEX IQ Highrise

It's all stacking blocks

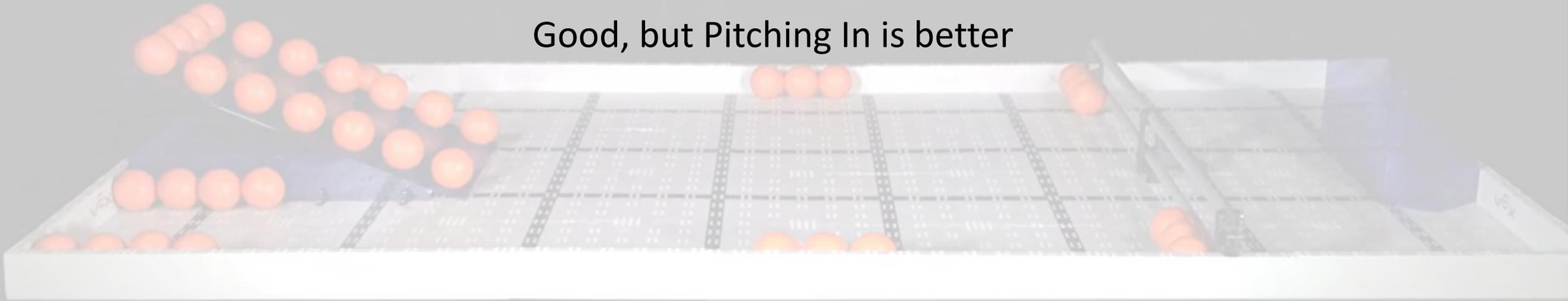
Stacking cubes all day!



VEX IQ CHALLENGE

VEX IQ Bank Shot

Good, but Pitching In is better



Pitching In is the same game, better robots



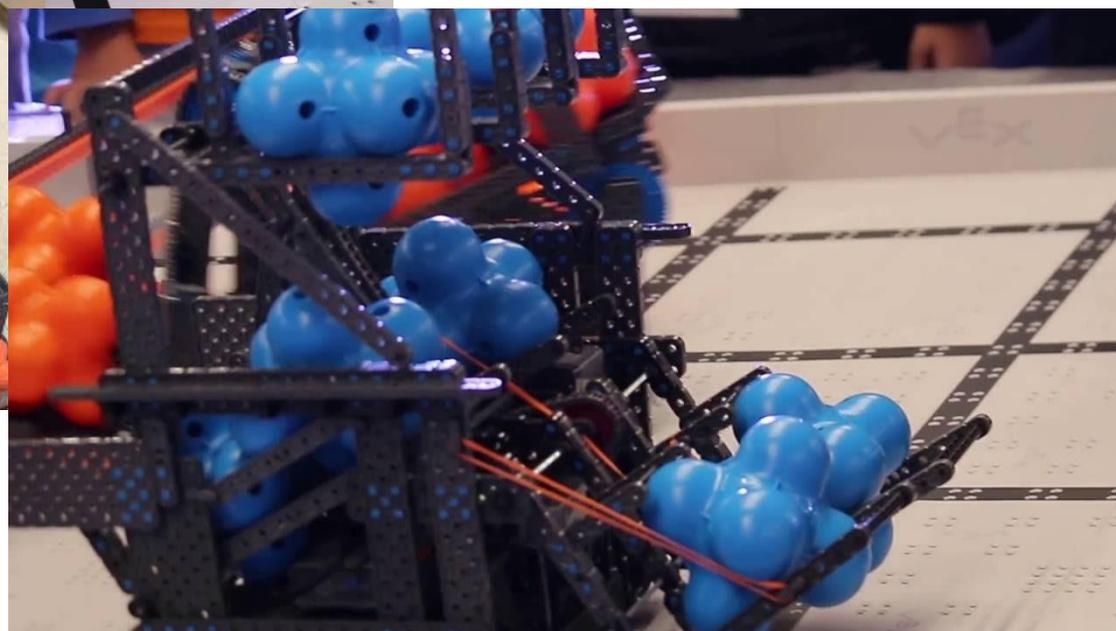
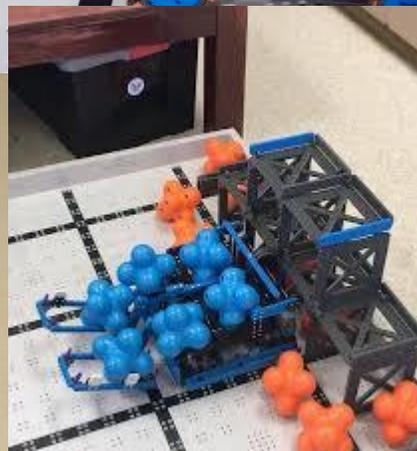
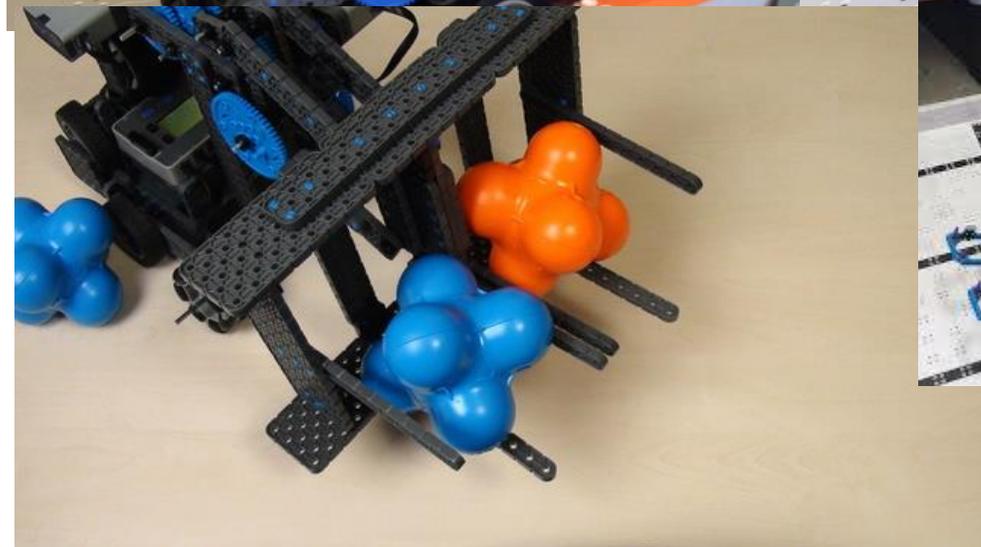
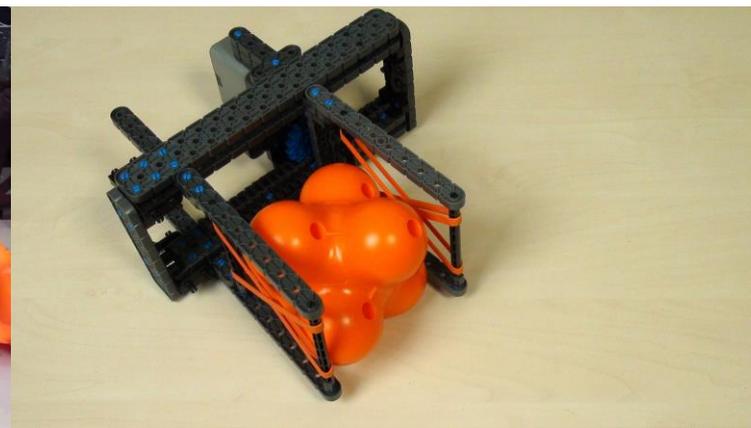
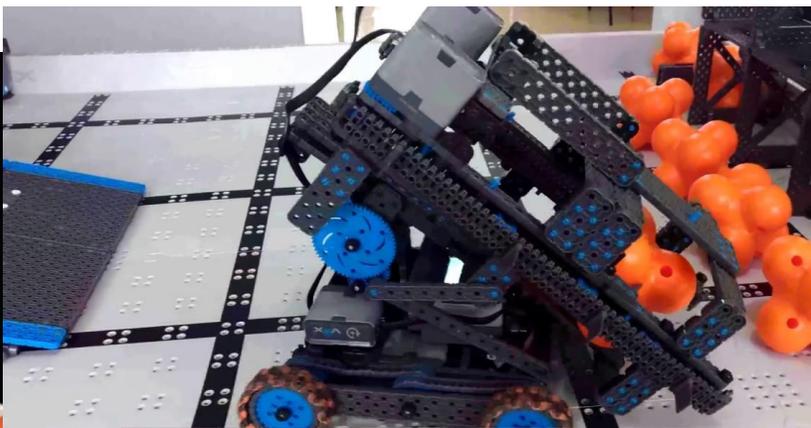
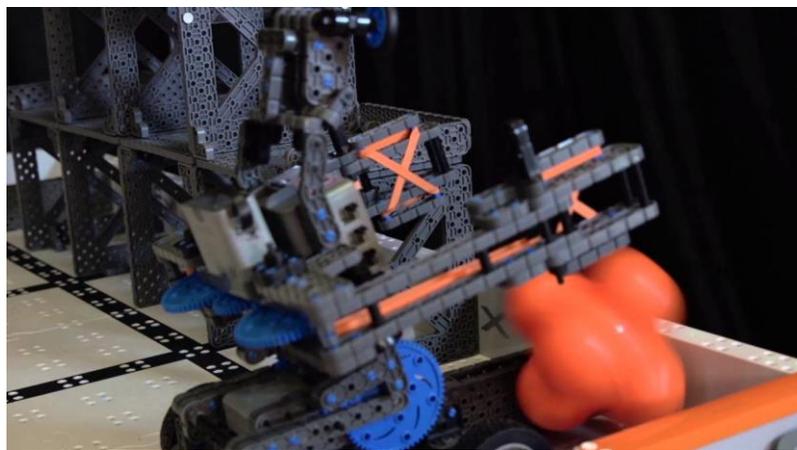
A VEX IQ Challenge arena with a white grid floor and black boundary lines. A blue robot is positioned in the center. To the left, a vertical stack of orange spheres is suspended by a thin wire. To the right, a tall metal structure holds several blue spheres. The robot is currently holding a vertical stack of blue spheres. The text "VEX IQ CHALLENGE" is visible on the robot's top deck.

VEX IQ Crossover

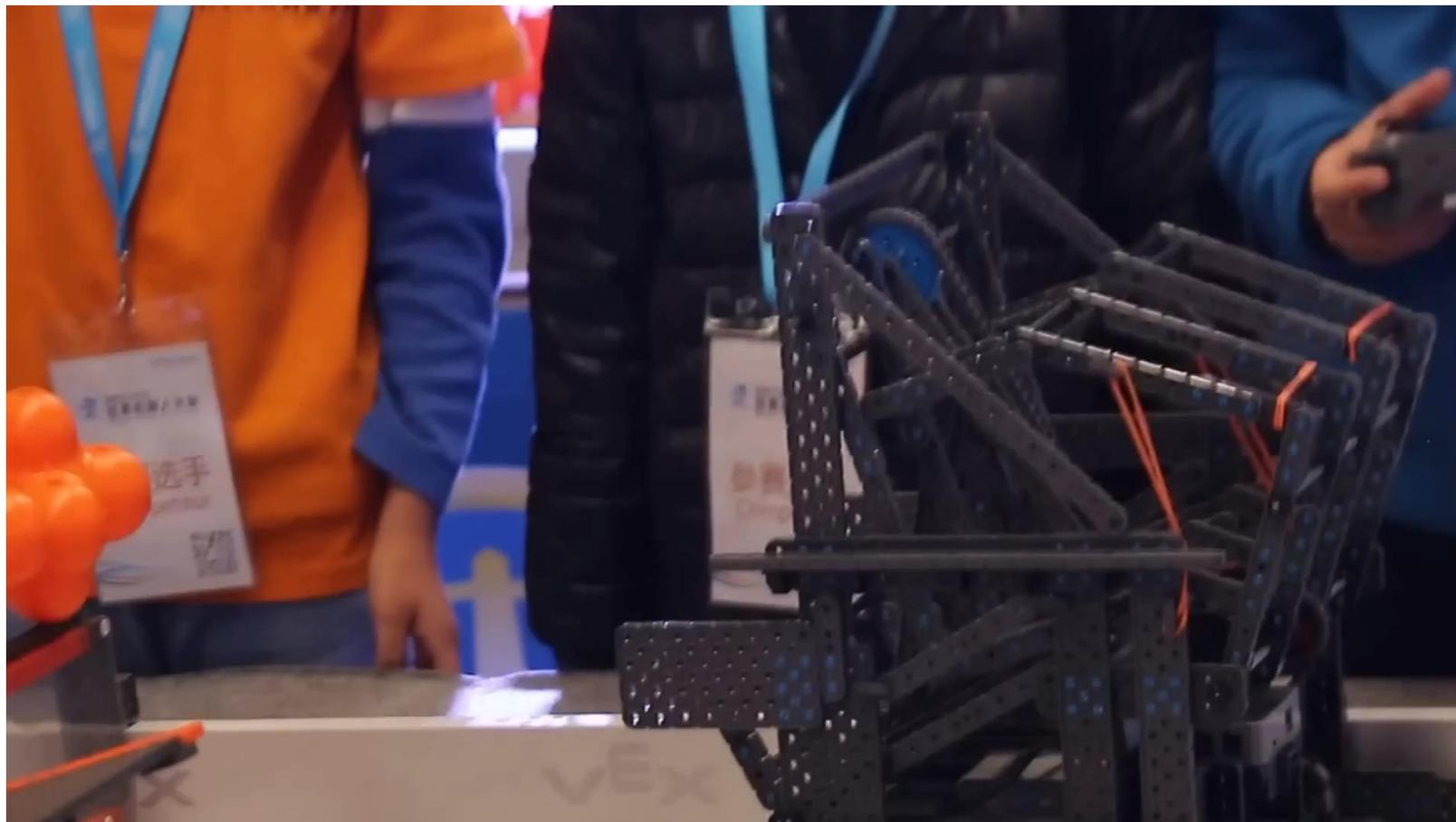
Picking up non-spheres!

And balancing

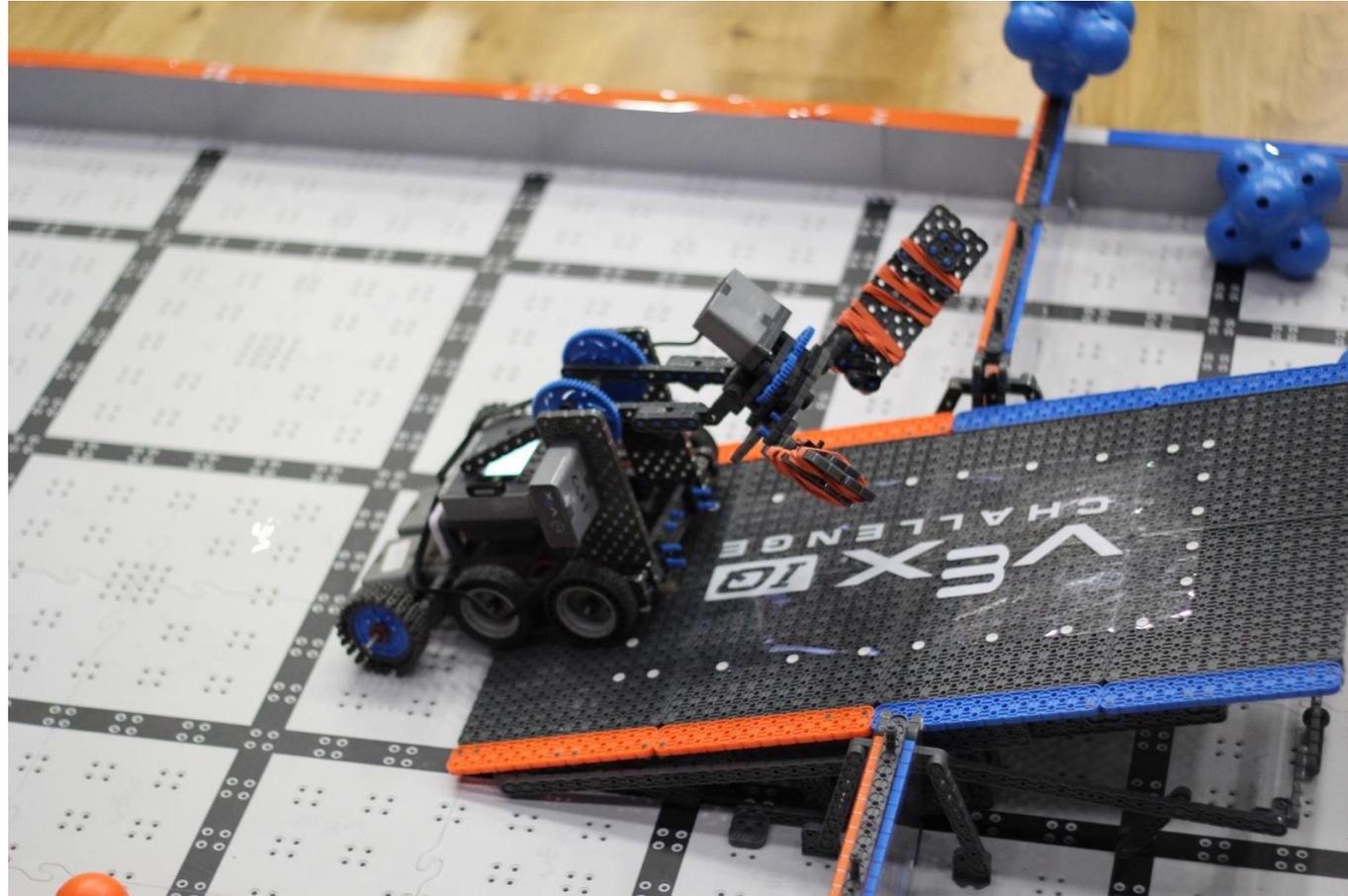
Picking up non-spheres



Picking up non-spheres



Balancing is coming back! (I think)



A VEX IQ robot, the 'Ringmaster', is shown in a light grey, semi-transparent view. The robot is a rectangular chassis with a central motor and a complex mechanism on the right side. In the foreground, a row of colorful rings (red, green, blue) is visible, which are part of the robot's mechanism. The background is a plain, light grey surface.

VEX IQ Ringmaster

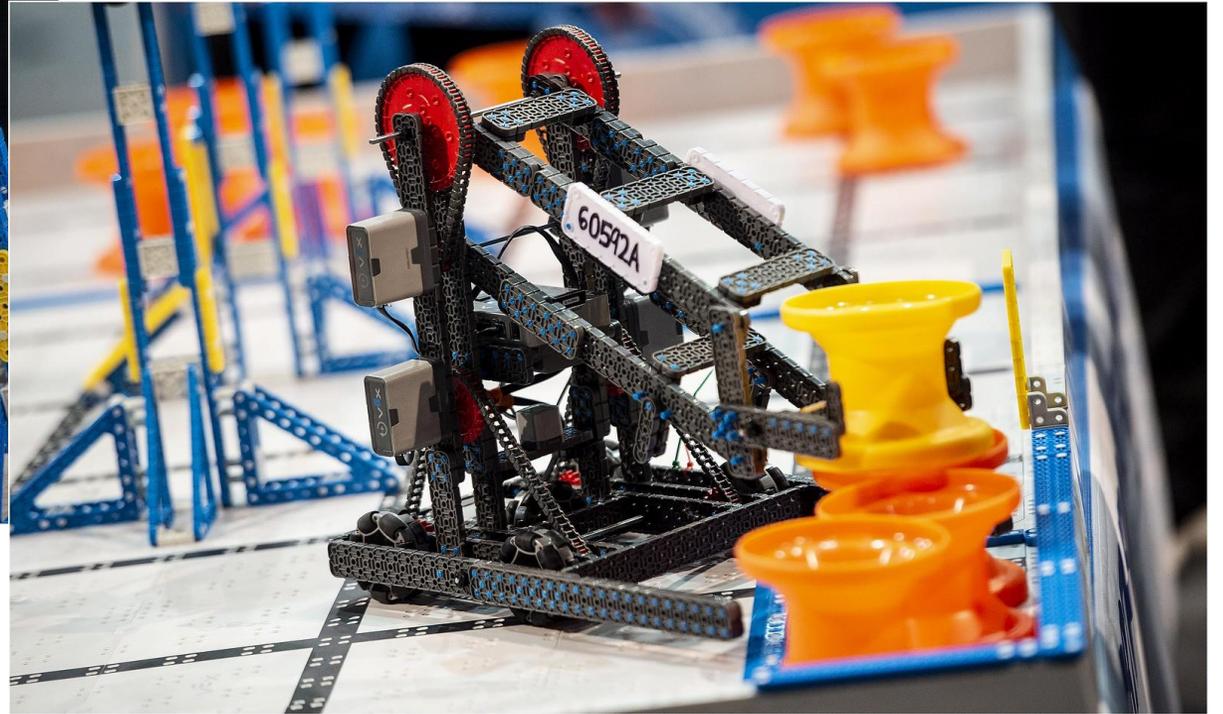
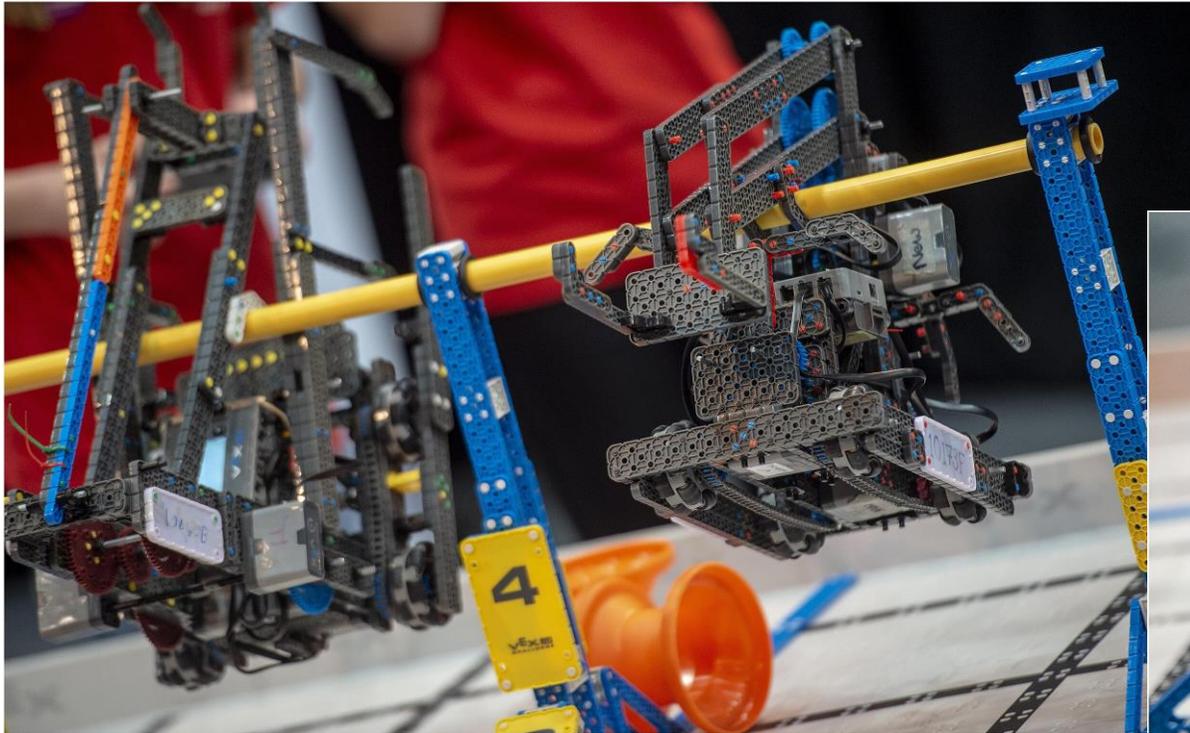
Anything with rings again, look here!

A VEX IQ robot is shown in a competition environment. The robot is black and grey, equipped with a custom-built climbing mechanism featuring a large orange wheel and a grey motor. It has two arms extending forward, also with orange wheels. The robot is positioned on a black and white checkered floor. In the background, there is a blue and yellow obstacle course with a horizontal yellow bar and two vertical blue pillars. The text "VEX IQ Next Level" is overlaid in the center of the image.

VEX IQ Next Level

Climbing & Arms

Arms and climbing!



VEX IQ
CHALLENGE
SQUARED AWAY

VEX IQ Squared Away

Weird game – lots of cool stuff though



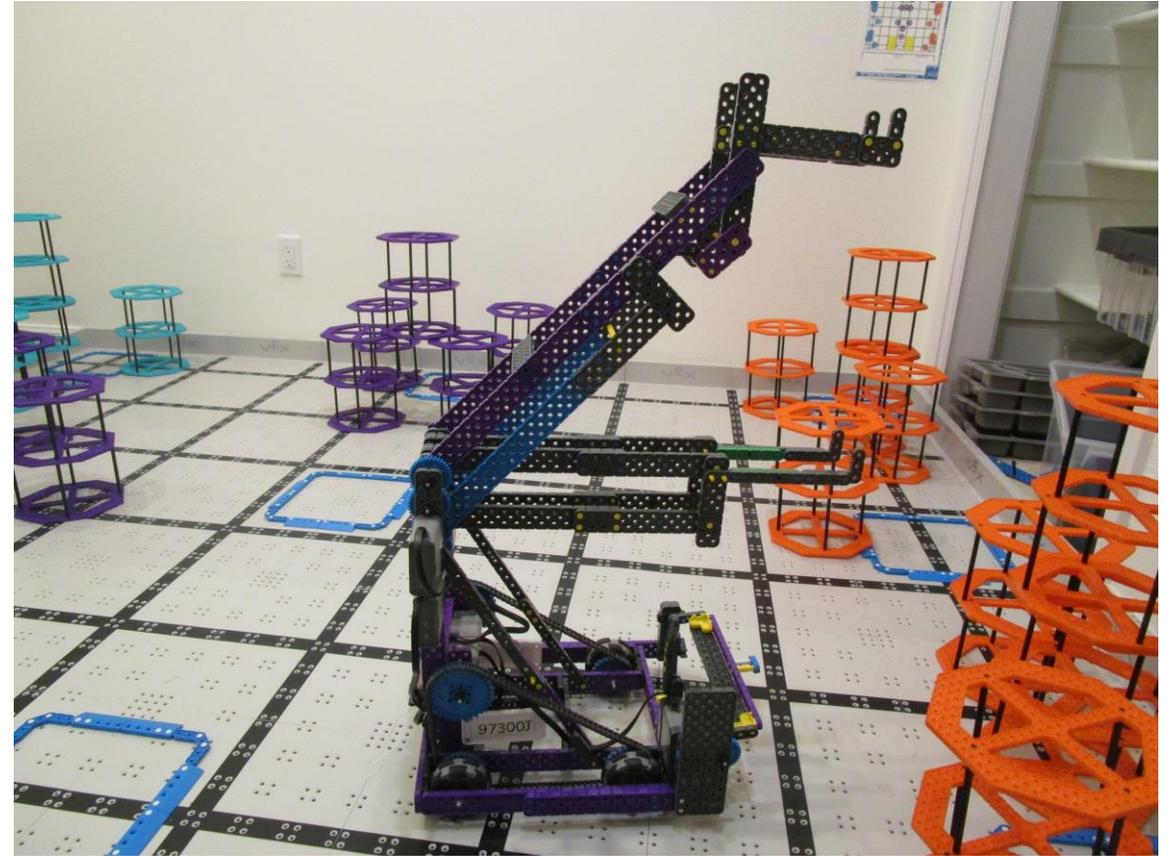
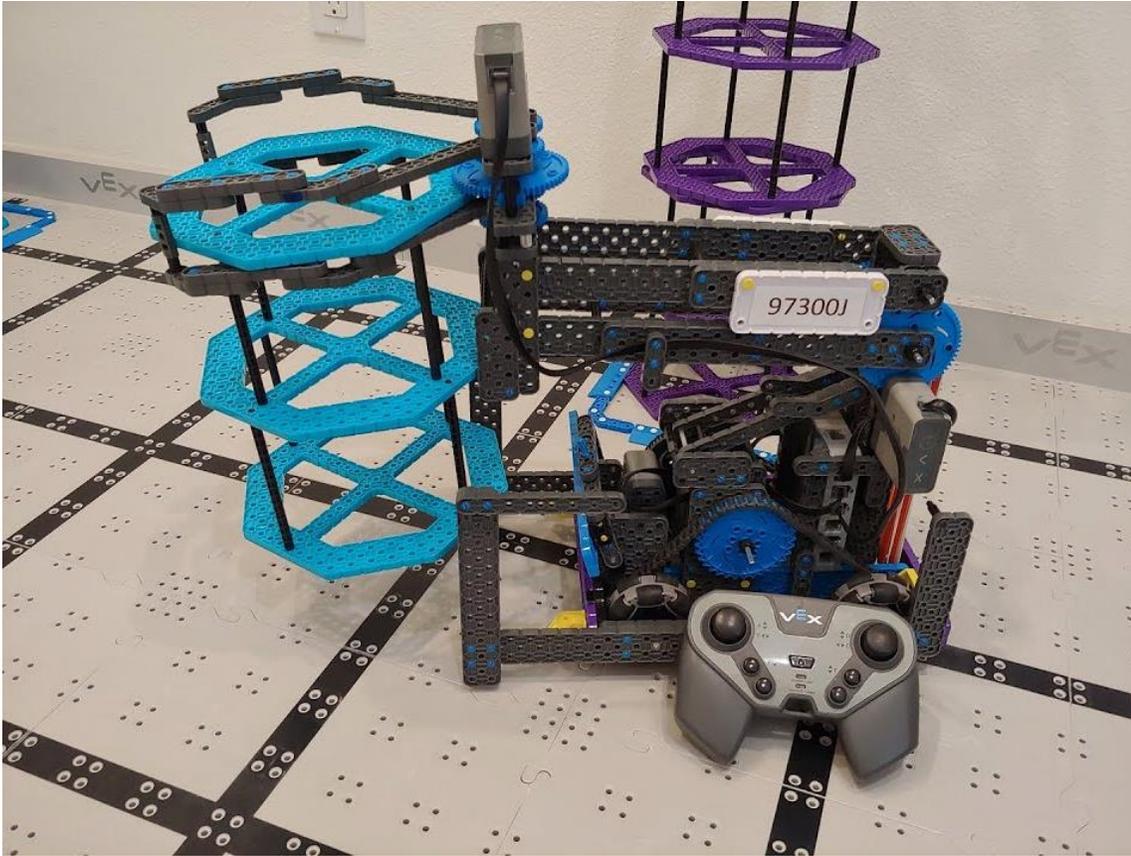
+1

VEX IQ Rise Above

Arms & stacking!



Great arms and stacking!



VEX IQ CHALLENGE

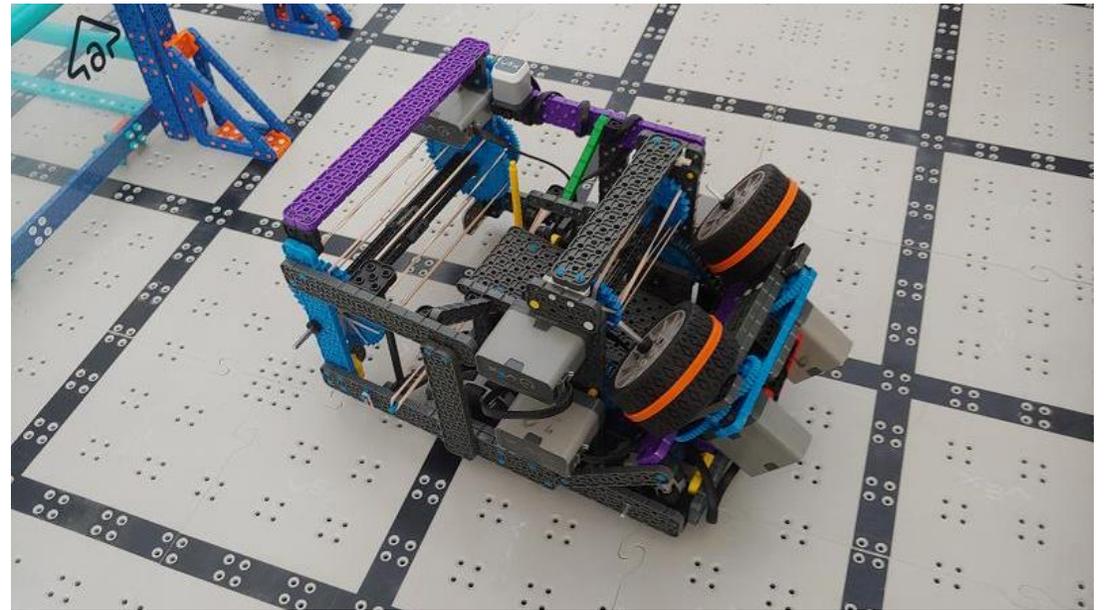
VEX IQ Pitching In

Shooting all the way!

PITCHING IN



Catapults and Flywheels





VEX IQ
COMPETITION

VEX IQ Slapshot

Pucks? Discs?

SLAPSHOT

Discs and pucks?

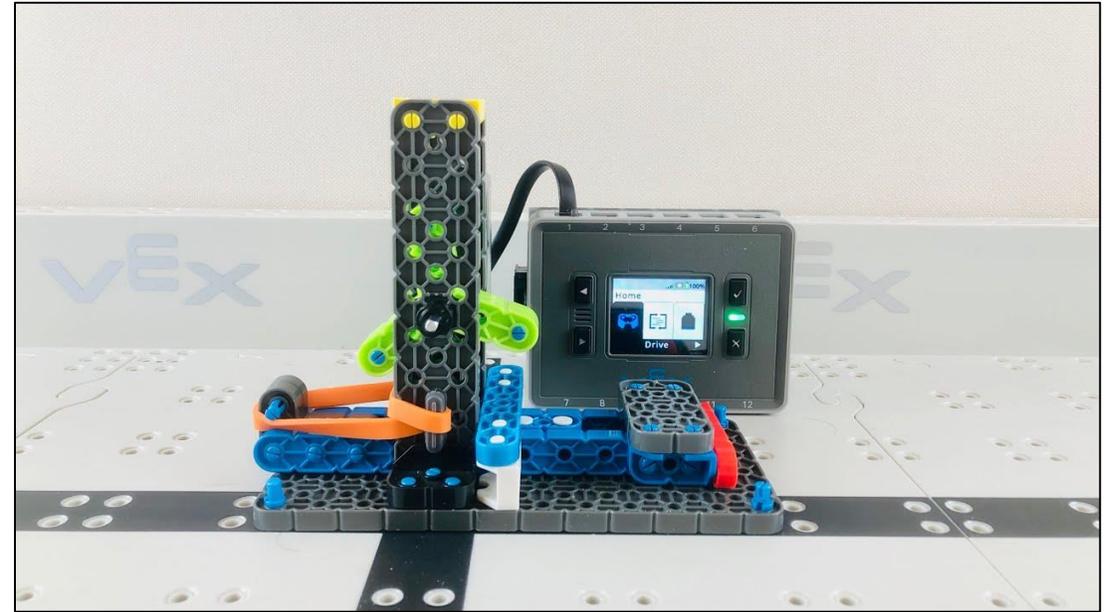


Shooting a flat game piece with...

A wheel



A puncher



VEX IQ
ROBOTICS
COMPETITION

VEX IQ Full Volume

??????????????

FULL VOLUME

