PAIR OF DICE Robotics

SOUTHEAST CAREER TECHNICAL ACADEMY

TEAM 7426

MEET GUS

2023 TECHNICAL BINDER

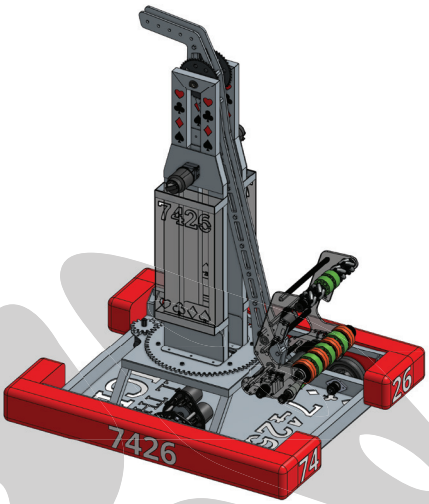
FIRST NEVADA

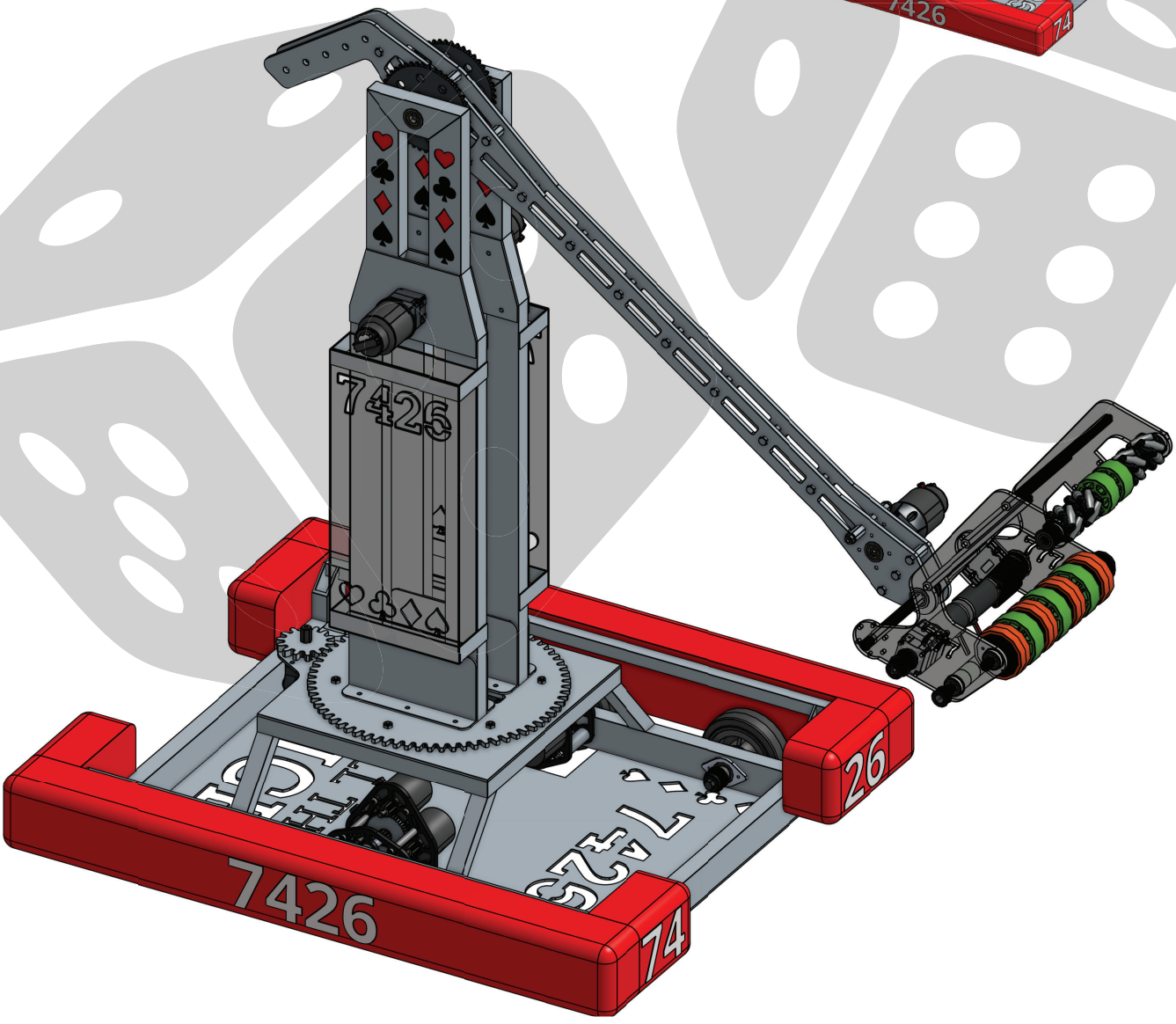
@PairOfDiceFRC

Design Features

FIRST NEVADA

- Reliable 6 wheel Tank Drive
- Intakes from both stations and Floor
- Scores cones and cubes in all goals
- Turret can spin more than 360°
- Auto with 1 cone and auto balance
- Auto with 1 cone and 1 cube

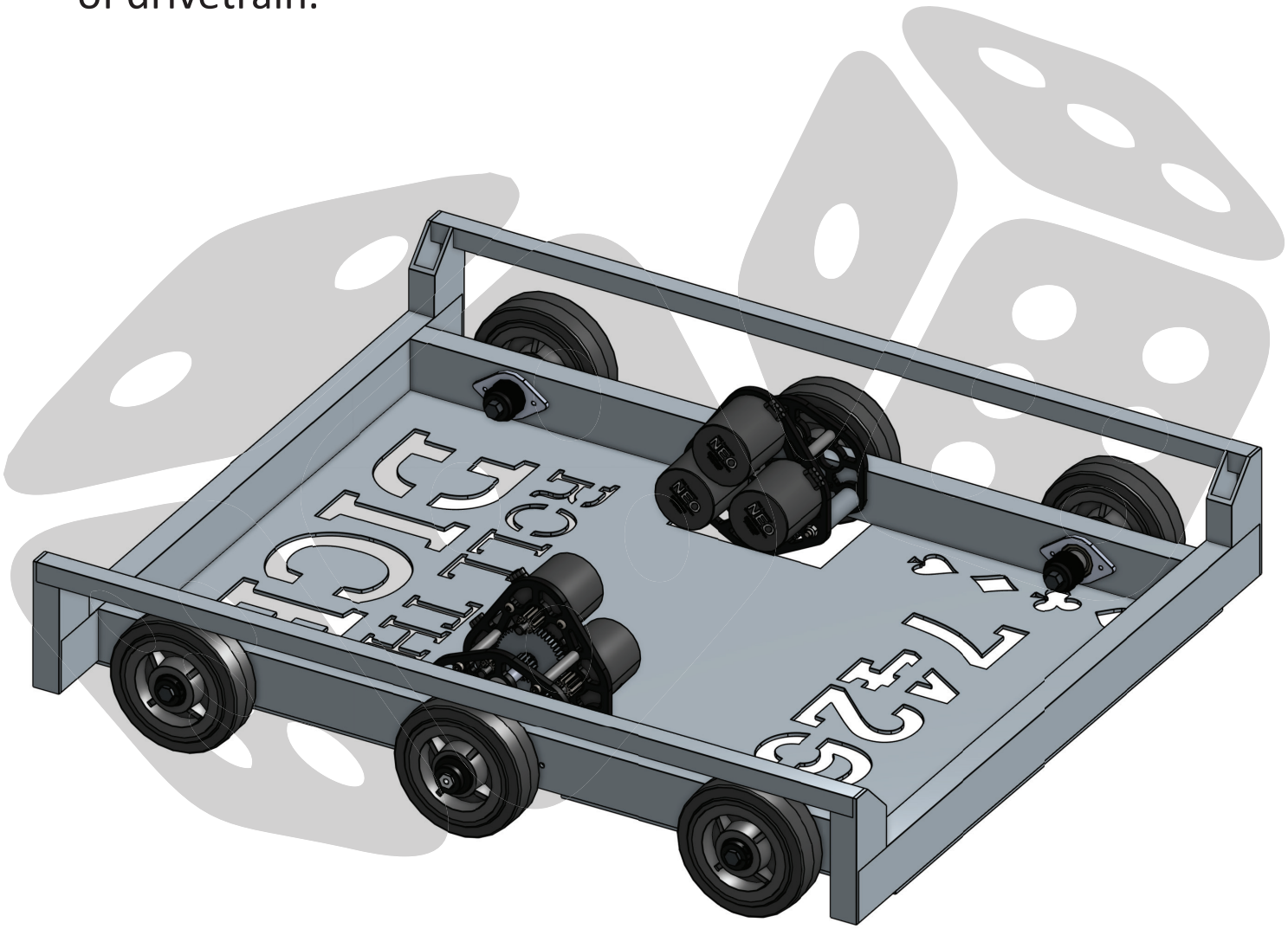




Drivetrain Design

FIRST NEVADA

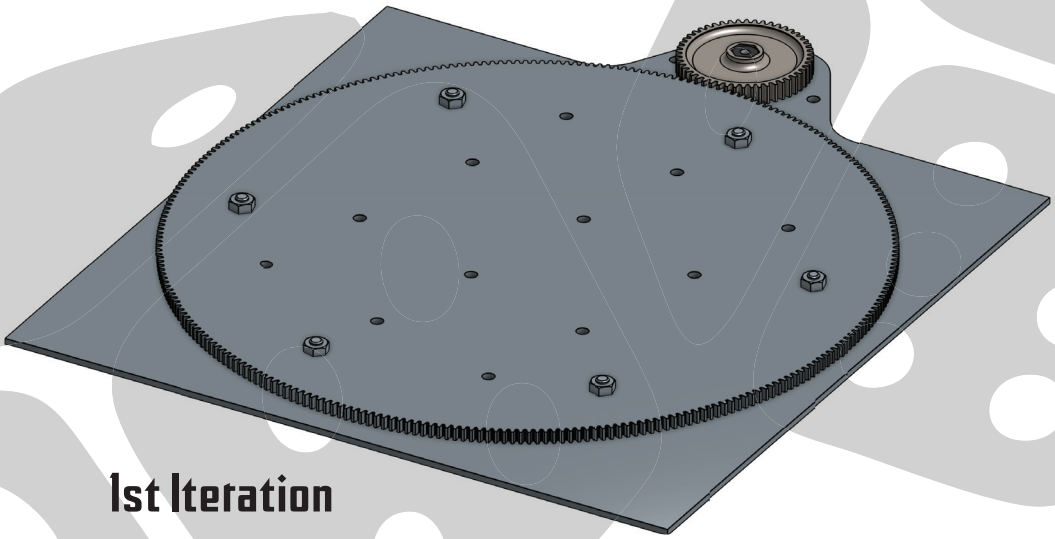
This year we decided to go with the old reliable tank drive. After perfecting our 6 wheel tank drive during the off season we decided that we wanted to give it another chance. Our goal is to capitalize on the experience we have with this type of drivetrain.



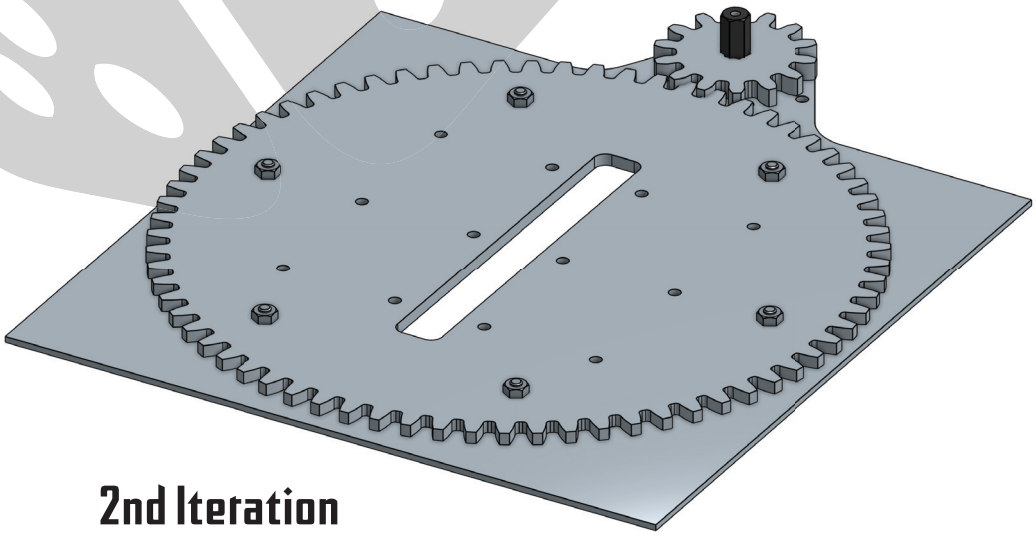
Turret Feature

FIRST NEVADA

After spending a good amount of our off season studying and designing our own turret, we decided that this was the year we needed to bring that to life. Our turret has an opening in the center so that our wires can go through to the bottom of the robot. Our drivetrain motor controllers and our main breaker are the only wires that stay below our turret.



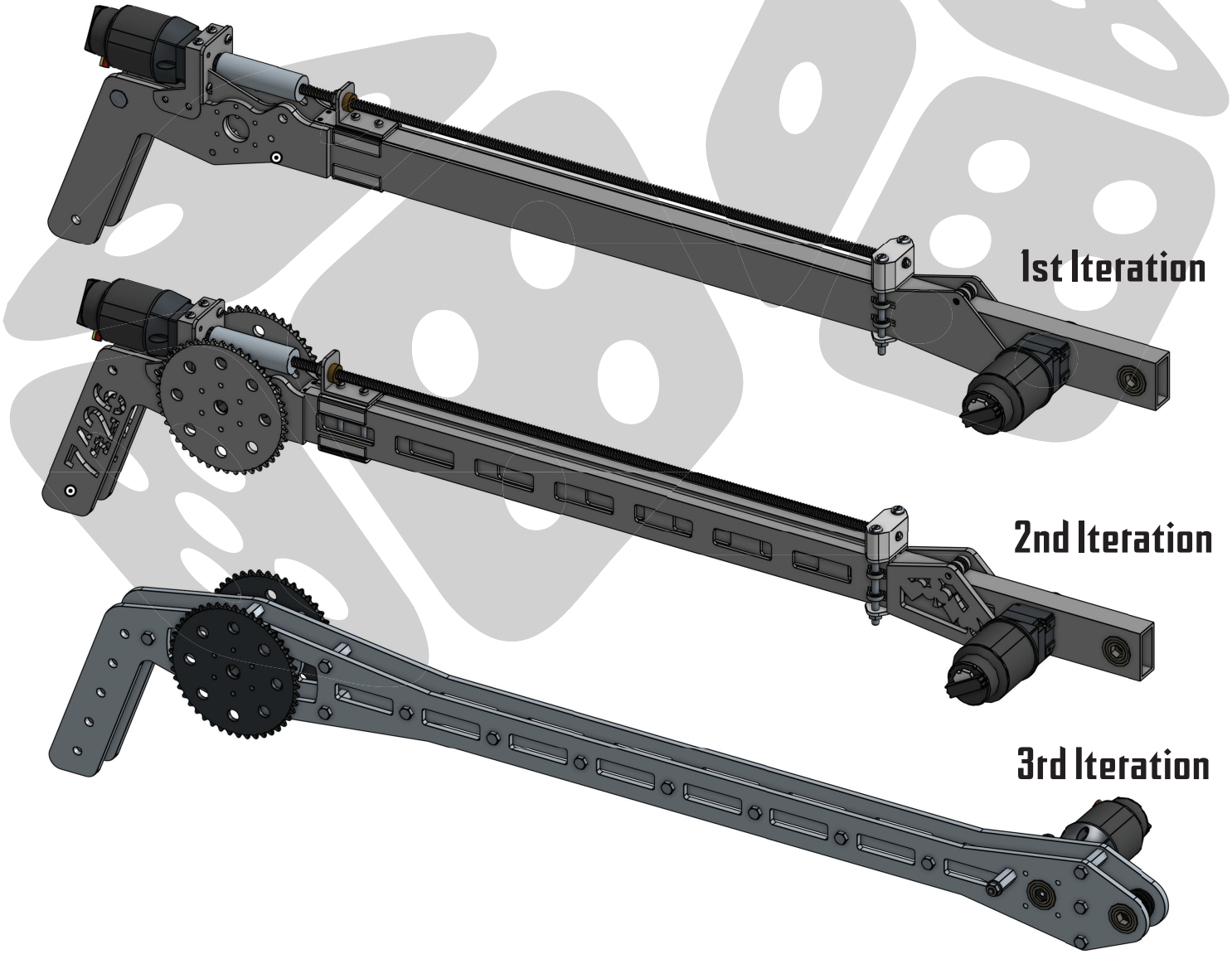
1st Iteration



2nd Iteration

Arm Design

When our team first designed the arm we felt the need to have a telescoping system to be able to reach the high goals. Although we loved our telescope feature and it did make it easier to score, it was not really necessary and it caused our arm to be structuraly weak. We decided to remove the telescope and use a much lighter and stronger arm.

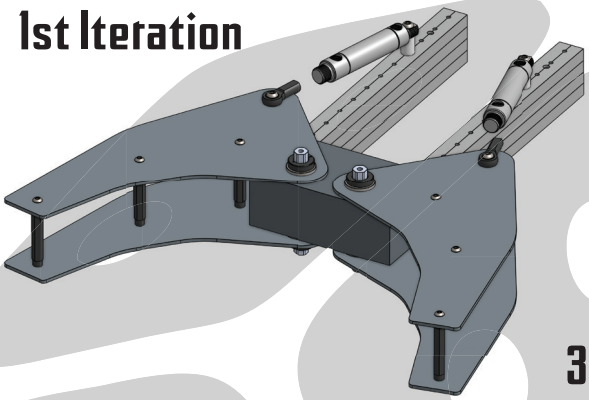


Claw Design

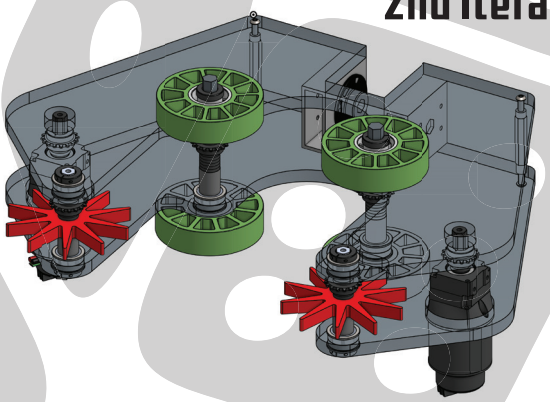
FIRST NEVADA

Our team designed our arm to be able to adapt easily with any claw system we wanted. We had many different types of intakes prototypes before we narrowed everything down to what we have below. We ended up with the horizontal look due to how much easier it made to pick up cones and cubes from both human player stations as well as floor.

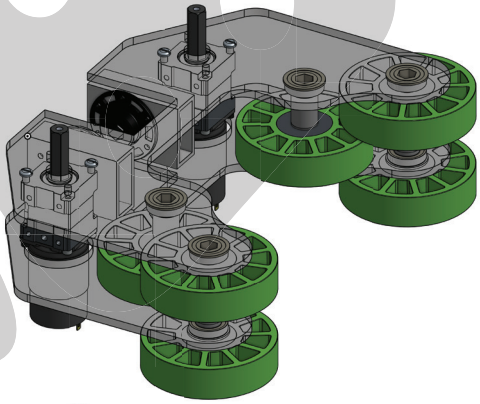
1st Iteration



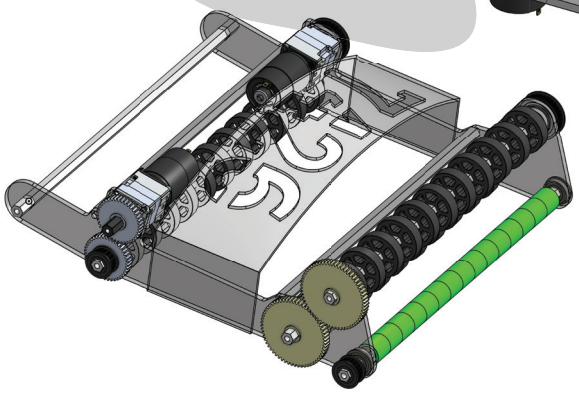
2nd Iteration



3rd Iteration



4th Iteration



5th Iteration

Full Robot Design

FIRST NEVADA